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Guidance for the Reregistration of Pesticide Products Containing Metribuzin as the Active Ingredient

(U.S.) Environmental Protection Agency
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GUIDANCE FOR THE
REREGISTRATION OF MANUFACTURING-USE
AND CERTAIN END-USE PESTICIDE PRODUCTS

CONTAINING

METRIBUZIN

CASE NUMBER 181

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D. C. 20460

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Portions of this document are not fully legible.

The document contains information regarding the reregistration of pesticide products containing the subject active ingredient. The document includes how to register under a registration standard, regulatory position and rationale, and summaries of data requirements and data gaps. Also included is a bibliography containing citations of all studies reviewed by EPA in arriving at the positions and conclusions contained in the standard.

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INTRODUCTION

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA sec. 3(g)) directs EPA to reregister all pesticides as expeditiously as possible.

To carry out this task, EPA has established the Registration Standards program, which will review all pesticide products containing active ingredients first registered before January 1, 1977. Pesticides will be reviewed in use clusters which have been ranked to give earliest review to pesticides used on food and feed crops.

The Registration Standards program involves a thorough review of the scientific data base underlying pesticide registrations and an identification of essential but missing studies which may not have been required when the product was initially registered or studies that are now considered insufficient. EPA's reassessment results in the development of a regulatory position, contained in a Registration Standard, on each pesticide and its uses. The Agency may require the registrant to modify product labels to provide additional precautionary statements, restrict the use of the pesticide to certified applicators, provide reentry intervals, modify uses or formulation types, specify certain packaging limitations, or other requirements to assure that proper use of the pesticide will not result in adverse effects on the environment.

The scientific review, which is not contained in this Guidance Package but is available upon request, concentrates on the technical grade of the active ingredient and identifies missing generic data. However, during the review of these data we are also looking for potential hazards that may be associated with the end use (formulated) products that contain the active ingredient. If we have serious concerns, we will address end use products as part of the Registration Standards program and will propose regulatory actions to the extent necessary to protect the public.

EPA has the authority under FIFRA sec. 3(c)(2)(B) to require registrants to submit data that will answer our questions regarding the hazard that may result from the intended use of a pesticide. Although sec. 3(c)(2)(B) provides that all registrants are responsible for these data, the Agency generally imposes generic data requirements only on the registrants of the manufacturing use products (basic suppliers of the active ingredient) and other producers who do not qualify for the formulator's exemption.*

A producer who wishes to qualify for the formulator's exemption may change his source of supply to a registered source, provided the source does not share ownership in common with the registrant's firm. A registrant may do so by submitting a new Confidential Statement of Formula, EPA Form 8570-4, identifying the registered source of the active ingredient, to the appropriate Product Manager within 90 days of receipt of this Guidance Document. The chart on the following page shows what is generally required of those who do and do not qualify for the formulator's exemption in the Registration Standards program.

If you decide to request the Agency to cancel the registration of any of your products subject to the requirements of this Guidance Document, please notify the Product Manager named in the cover letter, within 90 days from the receipt of this document. If you decide to maintain your product registration(s), you must provide the information described in the following pages within the timeframes outlined. EPA will issue a notice of intent to cancel or suspend the registration of any currently registered product which does not comply with the requirements set forth in this Guidance Document.

You are reminded that FIFRA sec. 6(a)(2) requires you to submit factual information raising concerns of possible unreasonable adverse effects of a pesticide. You should notify the Agency of interim results of studies in progress if those results show possible adverse effects.

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*The formulator's exemption applies to a registrant of an product if the source of his active ingredient(s): (1) is a registered product and (2) is purchased from a source which does not have ownership in common with the registrant's firm.

PRODUCTS SUBJECT TO THE REGISTRATION STANDARDS PROGRAM	ACTION(S) REQUIRED TO MAINTAIN REGISTRATION
I. Products That Do Not Qualify For The Formulator's Exemption	
A. Single Active Ingredient Products*	**These products must be reregistered. To obtain reregistration, labeling, packaging and data requirements must be satisfied in accordance with the Registration Standards Guidance Document.**
B. Multiple Active Ingredient Products	**These products will not be reregistered at this time. However, generic data required to continue the registration of the active ingredient under review, as described in the Registration Standards Guidance Document, will be required and some labeling precautions may also be required.**
II. Products That Do Qualify For The Formulator's Exemption	**Only when additional restrictions or labeling are needed to protect man or the environment will these products be subject to the Registration Standard requirements. Affected products will be dealt with in a variety of ways, including but not limited to the Label Improvement Program and special intent to cancel notices.**

*** End use products of registrants who also produce a manufacturing use product will not be required to be reregistered provided that registrant fulfills the requirements specified in the Guidance Document for manufacturing use product(s). Such end use products will be subject to the labeling changes required for products in "II" above. If there are no manufacturing use products registered by any company end use products will be required to be reregistered.**

NOTE: If all registrants in "I" above fail to meet the requirements in I-A and B above, then the registrants in "II" lose their right to qualify for the formulator's exemption and become subject to the requirements in I-A and B.

II. REGULATORY POSITION AND RATIONALE

A. INTRODUCTION

This Registration Standard describes the regulatory position and rationale of the Environmental Protection Agency ("The Agency") for all registered manufacturing-use products (MP's) and end-use products (EP's) containing metribuzin as the sole active ingredient. The Agency bases its position and rationale on an evaluation of all MP's, and FIFRA sections 3 and 24(c) and intrastate uses registered for metribuzin. EP's are reviewed only when there are no MP's registered or when the label has been changed significantly from the current accepted label. Mixtures are included only when there is a significant change in the label. After briefly describing the chemical and its uses, this chapter presents the Agency's regulatory position and rationale, the criteria for registration, acceptable ranges and limits, labeling requirements, and the tolerance reassessments.

B. DESCRIPTION OF CHEMICAL

Metribuzin is the acceptable common name for the compound: 4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H) one as determined by the British Standards Institution, International Organization for Standardization, and Weed Science Society of America. Other names include Lexone, Sencor, Sencoral, Sencorex, 4-amino-6-tert-butyl-3-(methylthio)-1,2,4-triazin-5(4H)-one, 4-amino-6-tert-butyl-4,5-dihydro-3-methythio-1,2,4-triazin-5-one, 4-amino-6-tert-butyl-3-(methylthio)-triazin-5(4H)-one, metribuzin, Bayer 94337, Bayer 6159H, Bayer 6443H, and DIC 1468. The Chemical Abstracts Service (CAS) Registery number is 21087-64-9. The Office of Pesticide Program's EPA Chemical Code Number is 101101.

Metribuzin is a white crystalline solid at room temperature and has a sulfurous odor. The empirical formula is $C_8H_{14}N_4OS$, and its molecular weight is 214.28. The melting point is 125.5-126-5 °C. Metribuzin is soluble in aromatic and chlorinated hydrocarbon solvents, and in water (at 20 °C) to 1220 ppm.

Metribuzin is a triazine herbicide which selectively controls certain broadleaf weeds and grassy weed species on field crops, vegetable crops, bermuda grass (turf) and noncrop areas. Metribuzin may be soil incorporated, surface applied or applied foliarly, broadcast or banded using ground equipment. It can be applied by aerial equipment or sprinkler irrigation (potatoes). Of the total amount of metribuzin used in the United States 94 percent is on soybeans, ∼ 1.8 percent on potatoes, ∼ 1.5 percent on wheat, and ∼ 1.2 percent on sugarcane.

Metribuzin is a systemic herbicide which is absorbed by the root system and then travels through the plant causing chlorosis, growth inhibition and necrosis. Metribuzin is a photosynthetic inhibitor. Metribuzin was first registered for use in 1973. Technical metribuzin is produced in the United States by Mobay Chemical Corporation of Kansas City, Missouri.

Metribuzin is available as a 50 percent formulation intermediate (FI) and 94 percent technical for formulation of metribuzin end-use products. Metribuzin is available as a wettable powder (WP), flowable concentrate (FlC), and dry flowable (DF) formulations.

C. REGULATORY POSITION AND RATIONALE

Based on the review and evaluation of all available data and other relevant information on metribuzin, the Agency has made the following determinations:

1. The available data do not indicate that any of the risk criteria listed in 162.11(a) of Title 40 of the U.S. Code of Federal Regulations have been met or exceeded for the uses of metribuzin at the present time.

Rationale: Only minor or no discernible toxicity by the oral, dermal, inhalation and ocular routes of exposure was observed. The 2-year dog study satisfied the requirement for a chronic and subchronic dog study. This study indicated that dogs dosed with 1500 ppm (37.5 mg/kg) had reduced weight gain, increased mortality, hematological changes and liver and kidney damage. These observations were not seen at lower dosages, and the Acceptable Daily Intake (ADI) was based on the NOEL of 100 ppm (2.5 mg/kg) as shown in section G. The oncogenic potential of metribuzin is unclear at this time. Although the chronic mouse study study is negative for oncogenic effects, the chronic rat study (currently classified as "supplementary data") indicates a statistically significant ($p < 0.05$) increase in the incidence of adenoma of the liver bile duct and pituitary gland in females at the 300 ppm dose level. However, only a small number of animals were examined histopathologically from other dose levels and at this point it is not clear whether the apparent increase is related to compound administration. Additional data must be supplied in the form of histopathological examinations in the animals not previously examined in the other three dosage groups along with historical control data on the on the incidence of these tumors in this particular rat strain. Exact nomenclature (terminology used) used for neoplastic and non-neoplastic findings, specifically live bile duct adenoma, "changes in nucleus" in the liver and "tumor" must be defined. A teratology study in rabbits indicated no evidence of teratogenic effects at 135 mg/kg/day, the highest dose tested (HDT) and a NOEL of 15 mg/kg/day for maternal and fetal toxicity. The available data indicate no mutagenic effects.

In addition to a repeat of the rat chronic study, other data gaps include rat teratology, multigeneration reproduction study, two categories of mutagenicity testing, specifically gene mutatuion testing, studies in mammalian cells and tests for primary DNA damage such as sister chromatid exchange or unscheduled DNA synthesis assay.

2. Products which are substantially similar to the registered products may be considered for registration subject to the terms and conditions of this document. However, the Agency will not allow any significant new uses* to be established for metribuzin until the toxicology and residue chemistry data deficiencies identified in Table A have been satisfied.

Rationale: The Agency does not think new registrations of uses already on the market will increase the risks to the public from exposure to metribuzin because the total amount of product used will not increase. The Agency is unable to complete a tolerance reassessment of metribuzin because of extensive residue chemistry data gaps including additional metabolism data in plants, poultry, ruminants and additional data on crop and processed commodities. Toxicology data gaps include rat chronic, rat teratology and a multigeneration reproduction study. If additional metabolites of toxicological concern are found in the requested metabolism studies, the tolerance expression will have to be changed to include the additional metabolite(s) of concern.

3. The Agency will require MP's containing metribuzin to bear Category III hazard statements and other warning statements as required in the precautionary labeling under 40 CFR 162.10.

Rationale: Acute toxicity studies for metribuzin showed the following: Toxicity Category III for oral toxicity and Toxicity Category IV for acute inhalation and for dermal and primary eye irritation.

4. The Agency is requesting information on presence of N-nitroso contaminants in the 94 percent T and 50 percent FI, but is not taking action at this time.

Rationale: Compounds of similar structure including cyanazine, atrazine, simazine, pendimethalin, and parathion have been shown to contain N-nitroso contaminants. Available data, although incomplete, do not provide grounds for concern at this time. Action is reserved pending submission and review of the requested data.

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* "Significant New Use" is defined in 44 FR 27934, May 11, 1979. In case of new food or feed use, the Agency will consider as significant an increase in the Theoretical Maximum Residue Contribution of greater than 1 percent.

5. The Agency is requiring acute testing of metribuzin on a marine/estuarine fish species and an oyster species, and an acute dietary study on an upland gamebird species. No additional precautionary labeling or field testing is being required at this time. For the present, the Agency is requiring MP's and EP's containing metribuzin to bear revised environmental hazard statements (Refer to Section F, REQUIRED LABELING).

Rationale: Ecological effects studies indicate that available data on metribuzin are adequate to fulfill regulatory requirements in most areas and that metribuzin was moderately toxic to upland bird species on an acute oral basis, no more than slightly toxic to birds in the diet, moderately toxic to *Daphnia magna* and slightly toxic to freshwater fish. Marine/estuarine species may be exposed to metribuzin used on sugarcane and soybeans. Available data indicate that metribuzin is slightly toxic to shrimp. Data on acute toxicity to a marine/estuarine fish species and an oyster species are needed. Directions for some use patterns indicate that applications can be repeated. Available information indicates that metribuzin is very persistent in the soil. Multiple treatments could increase dietary risk and a long soil half-life may indicate a significant chronic exposure. Environmental fate information is needed to determine the potential for chronic exposure. A detailed ecological hazard assessment cannot be made until the acute dietary study on an upland gamebird, acute toxicity studies on a marine/estuarine fish species and an oyster species, and appropriate environmental fate data are submitted. All other testing is reserved pending submission and review of these data.

6. The Agency is requiring a statement on the label concerning endangered plants on all EP's for use of metribuzin on noncropland (specifically, rights-of-way). Refer to Section F, REQUIRED LABELING.

Rationale: Consultation with Office of Endangered Species (OES) on another chemical, sulfometuron methyl (Oust Herbicide) indicates that several species of endangered plants including Brady pincushion cactus (*Pediocactus bradyi*), Mesa Verde cactus (*Sclerocactus mesae-verdae*), Peebles Navajo cactus (*Pediocactus peeblesianus* var. *peeblesianus*), Wright fishhook cactus (*Sclerocactus wrightiae*), Kuenzler hedgehog cactus (*Echinocereus kuenzleri*), Lloyd's hedgehog cactus (*Echinocereus lloydii*), Sneed pincushion cactus (*Coryphantha sneedii var. sneedii*), Chapman rhododendron (*Rhododendron chapmanii*), Rydbergy milk-vetch (*Astragalus perianus*), Harper's beauty (*Harperocallis flava*), dwarf bear-poppy (*Arctomecon humilis*), MacFarlane's four-o'clock (*Mirabilis macfarlanie*), northern wild monkshood

(*Aconitum noveboracense*), gypsum wild buckwheat (*Eriogonum gypsophilum*), Texas poppy-mallow (*Callirhoe scabriuscula*), hairy rattleweed (*Baptisia arachnifera*), Malheur wire-lettuce (*Stephanomeria malheurensis*), phacelia (*Phacelia argillacea*), bunched arrowhead (*Sagittaria fasciculata*), San Diego mesa mint (*Pogogyne abramsii*), Solano grass (*Orcuttia mucronata*), salt marsh bird's beak (*Cordylanthus maritimus* ssp. *maritimus*), Uinta Basin hookless cactus (*Sclerocactus glaucus*), Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*), and Antioch Dunes evening-primrose (*Oenothera deltoides* ssp. *howellii*), which occur on or adjacent to rights-of-way may be potentially exposed to metribuzin, when used in rights-of-way, and this exposure would cause mortality to contacted plants. Because of the limited population size of many of these species a local spraying program could virtually destroy the entire species. Exposure to metribuzin is likely to result in the destruction or adverse modification of the critical habitat of gypsum wild buckwheat, Malheur wire-lettuce, Contra Costa wallflower, and Antioch Dunes evening-primrose.

7. The Agency is imposing restrictions on rotational crops. The extent of these restrictions will be reconsidered when additional data are received (Refer to Section F, REQUIRED LABELING).

Rationale: It is the policy of the Agency to impose restrictions on planting rotational crops when data are insufficient to allow an assessment of the impact of planting subsequent crops. This serves to protect the public from impermissable residues in food and feed and to protect subsequent planted crops from adverse effects due to persisent residues.

8. The Agency will require ground water monitoring studies for metribuzin. The registrants will be notified of types of studies required and sites to be tested (the Agency is in the process of determining the types of studies and sites to be tested), by means of an amendment to the Standard three months after issuance of the Standard. The Agency is requireing that a ground water advisory appear on the label of all EP's (Refer to Section F, REVISIED LABELING).

Rationale: Metribuzin was detected in the low parts-per-billion range in Ohio rivers and Iowa wells. Although there are several data gaps in the area of environmental fate, the available data indicate metribuzin has a potential to contaminate ground water in soils lower in organic matter and clay content. Both the soil absorption and column studies reviewed indicate that metribuzin has considerable potential to leach in a number of soil types. Metribuzin dissipates in the field with half-lives of < 1 to about 6 months. Data gaps in the area of environmental fate include hydrolysis, photodegradation, aerobic and anaerobic soil metabolism, leaching, absorption/desorption studies, field dissipation and accumulation studies in crops and fish.

However, hydrolysis, photodegradation in water and on soil, aerobic and anaerobic soil metabolism, mobility and field dissipation were requested on July 25, 1984 for ground water contamination assessment through the Data Call-in process. The data were received on November 1984. These studies have been screened and support the Agency's concern over the potential for ground water contamination and the need for the ground water monitoring.

9. The Agency has determined that all uses of metribuzin should be classified for "RESTRICTED USE" with appropriate labeling (Refer to Section F, REQUIRED LABELING and SECTION IV of the Guidance Document).

Rationale: Metribuzin has been detected in the low parts per billion range in Ohio rivers and Iowa wells. The chronic rat study indicates a significant ($p<0.05$) increase in the incidence of adenoma of the liver bile duct and pituitary gland in females of the 300 ppm dose level. In addition to a repeat of this study data gaps include rat teratology, multigeneration rat reproduction study and mutagenicity testing.

10. The Agency is not requiring a re-entry interval for currently registered uses of metribuzin at this time.

Rationale: Metribuzin has low acute toxicity (Category III) for oral and Category IV for all other forms of acute toxicity.

D. CRITERIA FOR REGISTRATION UNDER THIS DOCUMENT

To be subject to this guidance document, MP's must meet the following conditions:

1. Contain metribuzin as the sole active ingredient and,

2. Conform to the acute toxicity limits, production composition, and use pattern requirements listed in Section F of this document.

Registration of products subject to this document must comply with all terms and conditions described in it, including commitment to fill data gaps on a schedule acceptable to EPA and consistent with that required of the present registrant. All registrants and applicants for registration under this document must follow the instructions contained in this document and complete and submit the appropriate forms within the specified time.

E. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Standard

Technical grade products must contain at least 94.0 percent metribuzin as the sole active ingredient. MP's must contain 50 percent metribuzin as the sole active ingredient. Each MP formulation proposed for registration must be fully described active ingredient found in MP's must be substantially similar to that in currently registered technical products or manufacturing-use products. An MP not meeting these requirements will be considered a new product and will not be registerable under this guidance document.

2. Acute Toxicity Limits

The Agency will reconsider registrations of products containing metribuzin, provided that the product labeling bears appropriate precautionary statements for the acute toxicity category in which each product is placed.

3. Use Patterns

To be registered under this standard, MP's containing metribuzin must be labeled for formulation only into end-use herbicide products for commodities listed below. The attached index entry lists all registered uses, as well as approved maximum application rates and frequencies of application.

Metribuzin, a selective herbicide is registered for control of broadleaf and grassy weed species on the following sites: soybeans, potatoes, alfalfa, sainfoin, asparagus, barley, field corn, sugarcane, tomatoes, wheat, turf (bermuda grass), peas, lentils, and noncrop sites.

F. REQUIRED LABELING

All technical grade products, MPs and EPs containing metribuzin must bear appropriate labeling as specified in 40 CFR Section 162.10. Other portions of this guidance package contain information regarding label requirements.

In addition to the requirements stated in 40 CFR Section 162.10, the following information must appear on the labeling of products released for shipment after December 31, 1985, and on products in the channels of trade after June 30, 1986.

1. Ingredient Statement

The ingredient statement for MPs must list the active ingredient as:

Metribuzin, 4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)one

2. Manufacturing-Use Product Statements

All products intended for formulation into end-use products must bear the following statement:

"Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public water unless this product is specifically identified and addressed in an NPDES* permit. Do not discharge effluent containing this product to sewer systems without previously notifying in writing the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of EPA."

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* National Pollution Discharge Elimination System.

3. End-Use Products

Restricted Use

All products must be classified at "RESTRICTED USE" with appropriate language (Refer to 40 CFR 160.10(j)(2)(B).

Ground Water Advisory

"Metribuzin is a chemical which can travel (seep or leach) through soil and can contaminate ground water which may be used as drinking water. Metribuzin has been found in ground water as a result of agricultural use. Users are advised not to apply metribuzin where the water table (ground water) is close to the surface and where the soils are very permeable, i.e., well drained soils such as loamy sands. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water."

Outdoor Uses

"Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of waste."

Endangered Species - Noncropland (Rights-of-Way)

Notice: The use(s) of this product on rights-of-way may pose a hazard to certain Federally designated endangered plant species. They are known to be found in specific areas within the locations noted below. Prior to making applications, the user of this product must determine that no such species are located in or immediately adjacent to the area to be treated. For information on protected species contact the Endangered Species Specialist of the appropriate Regional Office of the U.S. Fish and Wildlife Service listed below:

Region 1-Portland, Oregon
    California counties of Contra Costa, Solano, San Diego, Santa Barbara, Ventura, Los Angeles and Orange.
    Idaho, Idaho county.
    Oregon, Harney county.
Region 2-Albequerque, New Mexico
    Arizona counties of Coconino and Navajo.
    New Mexico counties of San Juan, Otero, Chaves, Lincoln, Eddy and Dona Ana.
    Texas counties of El Paso, Pecos and Runnels.
Region 3-Twin Cities, Minnesota
    Iowa counties of Allamakee, Clayton, and Jackson.
Region 4-Atlanta, Georgia
    Florida counties of Wayne and Brantley.
    North Carolina, Henderson county.
    South Carolina, Greenville county.
Region 5-Newton Corner, Massachusetts
    New York, Ulster county.
Region 6-Denver, Colorado
    Utah counties of Emery, Piute, Garfield, Washington, Utah and Wayne.
    Colorado counties of Montezuma, Delta and Montrose.

Restrictions on Rotational Crops

"Do not plant food or feed crops other than those which are registered for use on metribuzin treated soils."

G. TOLERANCE REASSESSMENT

The Acceptable Daily Intake (ADI) for metribuzin was originally based on a 2-year feeding study in rats. The ADI was subsequently recalculated using a 2-year chronic dog feeding study because it resulted in a lower no-observable effect level (NOEL) of 100 parts per million (ppm).

The 2-year chronic rat feeding study was rereviewed and classified as supplementary data for the reasons stated in Section c(1). The 2-year chronic dog study was rereviewed and found adequate for regulatory purposes. It is recommended that the ADI continue to be based on this chronic dog study.

Using a 100-fold safety factor and the 100 ppm (2.5 mg/kg) NOEL from the dog study, the ADI was determined to be 0.025 mg/kg/day with a Maximum Permissible Intake (MPI) of 1.5 mg/kg for a 60 kg adult human. Theoretical maximum residue contribution (TMRC) for metribuzin based on established tolerances is 0.3508 mg/day for a 1.5 kg diet. Currently, the permanent tolerances utilize 23.39 percent of the ADI.

The Agency is unable to complete a full tolerance reassessment because the available metribuzin toxicology and residue data do not fully support the established tolerances listed below. The metabolism of metribuzin in animals is not fully understood. Therefore, the Agency is requiring data on metabolism of metribuzin and related metabolites in ruminants, poultry and several crops. An acceptable long-term rat study is required. The additional data will be used to assess dietary exposure to metribuzin and may lead to revisions in the existing tolerances. Therefore, the Agency will not grant any pending significant or new tolerances for metribuzin until the data are submitted.

In the United States, tolerances are currently established in 40 CFR Section 180.332 for the combined residues of the herbicide, 4-amino-6-(1,1-dimethylethyl)-3-(methythio)-1,2,4-triazin-5(4H)-one and its triazinone metabolites in or on the raw agricultural commodities listed below:

Commodities	Parts Per Million
Alfalfa, green	2.0
Alfalfa, hay	7.0
Asparagus	0.05
Barley grain	0.75
Barley, straw	1.0
Cattle, fat	0.7
Cattle, mbyp	0.7
Cattle, meat	0.7
Corn, fodder	0.1
Corn, forage	0.1
Corn, fresh (inc. sweet k +CWHR)	0.05
Corn, grain (inc. popcorn)	0.05
Eggs	0.01
Goats, fat	0.7
Goats, mbyp	0.7
Goats, meat	0.7

Grass	2.0
Grass, hay	7.0
Hogs, fat	0.7
Hogs, mbyp	0.7
Hogs, meat	0.7
Horses, fat	0.7
Horses, mbyp	0.7
Horses, meat	0.7
Lentils (dried)	0.05
Lentils, forage	0.5
Lentils, vine hay	0.05
Milk	0.05
Peas	0.1
Peas (dried)	0.05
Peas, forage	0.5
Peas, vine hay	0.05
Potatoes	0.6
Poultry, fat	0.7
Poultry, mbyp	0.7
Poultry, meat	0.7
Sainfoin	2.0
Sainfoin, hay	7.0
Sheep, fat	0.7
Sheep, mbyp	0.7
Sheep, meat	0.7
Soybeans	0.1
Soybeans, forage	4.0
Soybeans, hay	4.0
Sugarcane	0.1
Tomatoes	0.1
Wheat, forage	2.0
Wheat, grain	0.75
Wheat, straw	1.0

In the United States tolerances are currently established in 21 CFR 193.25 for the combined residues of the herbicide 4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one and its triazinone metabolites in or on the following processed foods when present therein as a result of application of this herbicide to growing crops:

Food	Parts Per Million
Barley, milled fractions (except flour)	3.0
Potatoes, processed (inc. potato chips)	3.0
Sugarcane molasses	2.0
Wheat, milled fractions (except flour)	3.0

In the United States tolerances are currently established in 21 CFR 561.41 for combined residues of the herbicide 4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one and its triazinone metabolites in the following processed feeds when present therein as a result of application of this herbicide to growing crops:

Feed	Parts Per Million
Barley, milled fractions (except flour)	3.0
Potato waste, processed (dried)	3.0
Sugarcane bagasse	0.5
Sugarcane molasses	0.3
Tomato pomace, dried	2.0
Wheat, milled fractions (except flour)	3.0

International Tolerances

Canadian Tolerances

Tolerances for residues of metribuzin are established in Canada for asparagus at 0.1 ppm, barley grain at 0.1 ppm, lentils at 0.1 ppm, peas at 0.1 ppm, potatoes at 0.5 ppm, soybeans at 0.1 ppm, tomatoes at 0.1 ppm and wheat grain at 0.1 ppm. Although these tolerances differ from those in the United States, it is inappropriate for the Agency to harmonize these tolerances at the present time because of the extensive toxicology and residue chemistry data gaps. At the time the indicated data gaps for residue chemistry and toxicology are filled we will reassess harmonizing these tolerances.

There are no tolerances for residues of metribuzin in Mexico or Codex Alimentarius.

101101 4-AMINO-6-(1,1-DIMETHYLETHYL)-3-(METHYLTHIO)-1,2,4-TRIAZIN-5(4H)-ONE*

TYPE PESTICIDE: Herbicide

FORMULATIONS:
FI (50%)
WP (50%, 70%, 75%)
FlC (4 lb/gal)

GENERAL WARNINGS AND LIMITATIONS: A selective herbicide used for preemergence or early postemergence control of certain grasses and broadleaf weeds. Moisture is necessary to activate the chemical; for best results apply to moist soil. Rainfall or sprinkler irrigation within 2 weeks after application will improve effectiveness. Degree and duration of control will vary with dosage, soil type, soil texture, rainfall and other conditions. Heavy rains soon after application will cause injury to the crop. For best results, postemergence applications should be made when weeds are less than 1.5 inches tall. Where a dosage range is given, use the lower dosage on coarse and medium textured soils or soils with lower organic matter content (0.5 to 2 percent); use the higher dosage on fine soils or soils with higher organic matter content (more than 2 percent). Silty clay loams are transitional soils which may be classified as medium soils in some regions of the United States, and as fine soils in other regions. Do not use on sandy soils. When tank mixes are used, observe all cautions and limitations given on the labeling of tank mix chemicals. Apply in 10 to 40 gallons of water per acre by ground or 2 to 10 gallons by air, unless otherwise noted. Tolerances have been established for the combined residues of metribuzin and its triazinone metabolites.

Livestock Tolerances:

Cattle (fat, meat, mbyp)	0.7 ppm
Eggs	0.01 ppm
Goats (fat, meat, mbyp)	0.7 ppm
Hogs (fat, meat, mbyp)	0.7 ppm
Horses (fat, meat, mbyp)	0.7 ppm
Milk	0.7 ppm
Poultry (fat, meat, mbyp)	0.7 ppm
Sheep (fat, meat, mbyp)	0.7 ppm

DEFINITION OF TERMS:
K+CWHR = kernel plus cob with husk removed
mbyp = meat byproducts
lb = pounds
a.i. = active ingredient

*Metribuzin
Lexone
Sencor
4-amino-6-tert-butyl-3-(methylthio)-as-triazin-5(4H)-one

TIME REQUIRED FOR CONTROL: Not located.

PHYTOTOXICITY TO TARGET WEEDS: Not located.

PHYTOTOXICITY TO CROPS: Not located.

MODE OF ACTION: Inhibits photosynthesis.

BROADLEAF WEEDS CONTROLLED:

PBFADAA	Ageratum	
PCQAUAA	Beggarweed	(a)
PBKAKBA	Blue mustard	(a)
PEWAIBF	Buffalobur	
PZAAABW	Bur buttercup	
PFFAFBA	Bur beakchervil	
PADABBA	Carpetweed	(a)(c)
PAZAAAC	Chickweed	
PBFDQAA	Cocklebur	(a)(b)(c)
PCQATBA	Coffeeweed	(a)
PAZAOBB	Common chickweed	(a)
PBFDQBD	Common cocklebur	
PEDADBA	Common purslane	(a)(b)(c)
PBFAEBA	Common ragweed	(a)(c)
PBFBUBA	Common sunflower	
PAZALBB	Conical catchfly	
PAZABBA	Corn cockle	
PEUAPBB	Corn speedwell	
PAZAPBA	Cow cockle	
PEAAHBE	Curly dock	(b)(c)
PBFDHAA	Dandelion	(b)(c)
PBEABAA	Dayflower	
PBFBIBB	Dogfennel	
PBKAGAA	Falseflax	
PARABAA	Fiddleneck	
PBGACBB	Field bindweed	
PBKBFBA	Field penneycress	
PBZABAA	Filaree	
PDNABBA	Fireweed	
PBKANBE	Flixweed	(a)
PCQAUBC	Florida beggarweed	(c)
PEMAEBB	Florida pusley	(a)(b)(c)
PEYACBA	Florida waltheria	
PBXABBA	Fumitory	(c)
PBFBOAA	Galinsoga	
PBVAGBH	Garden spurge	
PBFAEBE	Giant ragweed	(b)
PBDAEAA	Goosefoot	
PBVAGBW	Graceful spurge	
PARAJAA	Gromwell	
PEWAIBG	Hairy nightshade	(d)

BROADLEAF WEEDS CONTROLLED (continued)

PCQBFBB	Haole koa	
PCQBSBB	Hemp sesbania	(a)(c)
PCOAFBA	Henbit	(a)
PCQAUBA	Hoary tickclover	
PBVABBB	Hophornbeam copperleaf	(a)
PEWAIBB	Horsenettle	(b)(c)
PEUAPBE	Ivyleaf speedwell	
PAAAABK	Jacob's ladder	
PAZAGBJ	Jagged chickweed	
PEWADBD	Jimsonweed	(a)(c)
PEAAGAC	Knotweed	
PBDAIBA	Kochia	(a)(b)(c)
PEAAGBP	Ladysthumb	(c)
PBDAEAB	Lambsquarters	(a)(c)
PBKBDBB	London rocket	
PARADBA	Madwort	
PDAAHAA	Mallow	
PBFAYBA	Marestail	
PBFAHBB	Mayweed	
PBFDKBC	Meadow salsify	(a)
PEMAEAA	Mexican clover	
PBVACBA	Mexicanweed	(c)
PEDACBA	Minerslettuce	
PBGAAAB	Morningglory	(b)(c)
PAZADBC	Mouseear chickweed	
PBKAAAC	Mustard	(c)
PELAZBA	Parsley-piert	
PEAAGBO	Pennsylvania smartweed	(a)(c)
PBKAWAA	Pepperweed	(a)
PAAAABI	Pigweed	
PBFCKBB	Pineappleweed	
PDAAJBF	Prickly sida	(a)(c)
PBFCEBF	Prickly lettuce	
PEAAGBD	Prostrate knotweed	
PAFACBC	Prostrate pigweed	(a)(c)
PBKAAAD	Purple mustard	
PCQARBE	Rattlebox	
PEAAHBB	Red sorrel	
PBFBFBA	Red tassleflower	
PAFACBI	Redroot pigweed	(a)(c)
PBZABBB	Redstem filaree	
PBFBHBF	Rough fleabane	
PBFARBI	Russian knapweed	
PBDAKBA	Russian thistle	(c)
PCQBKBC	Sensitiveplant	
PBKAHBA	Shepherdspurse	(a)
PCQAMBF	Sicklepod	(a)(c)
PEAAGAD	Smartweed	(c)
PAFACBE	Smooth pigweed	(a)(c)
PBFDCAA	Sowthistle	
PEUAPAA	Speedwell	

BROADLEAF WEEDS CONTROLLED (continued)

PAFACBJ	Spiny amaranth	
PAFACBD	Spleen amaranth	
PBVAGBK	Spotted spurge	(a)(b)(c)
PBVAGAA	Spurge	
PDAACBA	Spurred anoda	(a)
PZAAAGJ	Spurweed	
PFGAEBA	Stinging nettle	
PBFBUAA	Sunflower	(a)(c)
PBKANBB	Tansymustard	(a)
PAAAACD	Tarweed	
PARABBC	Tarweed fiddleneck	
PEUAIAA	Toadflax	(c)
PBKASAA	Treacle mustard	
PBKBDBA	Tumble mustard	
PDAABBB	Velvetleaf	(a)(c)
PDAAEBC	Venice mallow	(a)
PAZAHBA	White cockle	(a)
PEAAGBH	Wild buckwheat	(a)
PBKAFBE	Wild mustard	(a)
PBVAGAB	Wild poinsettia	(b)(c)
PBKADBB	Yellow rocket	(a)

(a) Control achieved by preemergence use.
(b) Partial control only.
(c) Control achieved by postemergence use.
(d) Suppression only; apply before plants are 1 inch tall.

GRASSES AND OTHER MONOCOTS CONTROLLED:

PCAARBC	Alexandergrass	
PCACKBA	Annual bluegrass	
PCABHBB	Barnyardgrass	(a)(b)(c)
PCACKAA	Bluegrass	(c)
PCACUBE	Bristly foxtail	
PCACEBA	Broadleaf panicum	
PCAARBD	Broadleaf signalgrass	(b)(c)
PCACKBB	Bulbous bluegrass	
PCAATBK	Cheat	
PCABFAA	Crabgrass	(b)(c)
PCABCBA	Crowfootgrass	(a)
PBEABAA	Dayflower	(c)
PCAATBM	Downy brome	(a)
PCACEBD	Fall panicum	(a)
PCAAWBB	Field sandbur	
PCACUAA	Foxtail	(b)(c)
PCABSBC	Foxtail barley	
PCACUBA	Giant foxtail	(c)
PCABIBA	Goosegrass	(c)
PCACUBF	Green foxtail	(c)
PCACEBH	Guineagrass	

4-AMINO-6-(1,1-DIMETHYLETHYL)-3-(METHYLTHIO)-1,2,4-TRIAZIN-5(4H)-ONE

GRASSES AND OTHER MONOCOTS CONTROLLED (continued)

PCABZBA	Italian ryegrass	
PCAATBF	Japanese brome	
PCACWBG	Johnsongrass (seedling)	(c)
PCABFBF	Large crabgrass	(a)(c)
PCABSBF	Little barley	
PCAAOAA	Oat	
PCAAFBC	Pacific meadow foxtail	
PCAACBA	Quackgrass	(b)(c)
PCAAXBD	Radiate fingergrass	
PCAATBN	Rescuegrass	
PCACDAA	Ricegrass	
PCAATBI	Ripgut brome	
PCAARAA	Signalgrass	(a)
PCAATBE	Smooth brome	(a)
PCABFBD	Smooth crabgrass	(a)(c)
PCADFBA	Wheat (volunteer)	
PCABSBD	Wild barley	
PCAAOBB	Wild oat	(a)
PCAAJBA	Windgrass	
PAAAABC	Wiregrass	
PCACUBD	Yellow foxtail	(c)
PBMADBI	Yellow nutsedge	(a)(b)

(a) Control achieved by preemergence use.
(b) Partial control only.
(c) Control acheived by postemergence use.

Site, Dosage and Formulation (lb a.i./A) — Tolerance, Use, Limitations

TERRESTRIAL FOOD CROP

(Agricultural Crops)

General Warnings and Limitations: Potatoes, soybeans, sugarcane, and tomatoes may be planted in treated areas 4 months after application of metribuzin. Barley and winter wheat may also be planted in treated areas 4 months after application to lentils, peas or soybeans. Alfalfa, asparagus, barley, corn, cotton, forage grasses, lentils, peas, rice and wheat may be planted in treated areas 8 months after application. All other crops may be planted 18 months after application. Do not apply to rotational crops during the same year as the first application. Cover crops may be planted any time after application, but treated areas should not be grazed, or the cover crop harvested for food or feed. Stand reduction of these crops may occur in some areas.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
/28069AA	Alfalfa	2 ppm (green alfalfa and grasses) 7 ppm (alfalfa and grass hay) Twenty-eight day preharvest interval. Do not graze treated areas within 28 days after application. General Information: Use only on a dormant established crop. Do not apply after growth begins in spring or before growth ceases in fall. May be applied to stands of alfalfa mixed with grasses; the higher dosages will result in reduction of forage grass stands. Do not use on sand or on soils with less than 0.5 percent organic matter content. In areas west of the Rocky Mountains, avoid using on soils with calcareous surface layer, high levels of lime or sodium and a pH greater than 7.5. May be applied to alfalfa in conjunction with a fluid fertilizer or impregnated on dry bulk fertilizer.
	0.38-1 (50% WP) (75% WP) (4 lb/gal FlC)	Dormant application. Broadcast. Make a single application in the fall after plants become dormant or in the spring before new growth starts. Use the lower dosage on sandy loam, or loamy sand soils in areas other than ID, OR and WA.
	0.75-1 (50% WP) (75% WP) (4 lb/gal FlC)	Dormant application. Broadcast. Apply to reduce stands of forage grasses, to prevent crowding out of alfalfa.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
	Alfalfa (continued)	
	0.25-0.38 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to ID, OR and WA. Dormant application. Broadcast. For the control of common chickweed. Apply to sandy loam or loamy sand soils.
	0.25-0.75 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to WA. Dormant application. Broadcast. Make a single application to established alfalfa during the dormant season. Tank mix with paraquat.
/16002AA	Asparagus	0.05 ppm Fourteen day preharvest interval. Do not exceed 2 lb a.i./A per crop season. General Information: Do not use on newly seeded asparagus or on young plants from crowns during the first growing season. Do not make postharvest applications until all spears have been harvested.
	1-2 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence. Broadcast. Make a single application in the early spring before spears or ferns emerge.
	0.5-1 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence. Broadcast. Split application. Apply before spears or ferns emerge, and follow with postharvest treatment.
		AND
	1-1.5 (50% WP) (75% WP) (4 lb/gal FlC)	Postharvest. Broadcast. Split application to follow preemergence treatment. Apply after last harvest of the season, but prior to fern emergence.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
/28063AA	Barley	0.75 ppm (grain) 1 ppm (straw) 3 ppm (milled fractions (except flour) of processed food and feed) Do not graze or harvest treated barley for feed before crop maturity. Do not graze treated fields after a fallow application. General Information: Do not apply more than once per crop season. Do not apply in the spring if a fall fallow application was made. Do not plant spring cereals following fall fallow applications.
	0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to areas east of the Cascade Mountains in ID, OR, UT, MO and WA on the varieties Compana, Hannchen, Hector, Hudson, Luther, Kamiak, Klages, Olympic, Piroline and Steptoe. Postemergence. Broadcast. Apply after barley has fully tillered and developed secondary roots, but before jointing. Do not apply on any soil containing less than 1 percent organic matter. Do not use if soils are high in lime or sodium or have a pH greater than 7.7. Temporary chlorosis may occur especially if the crop is under stress or if application is made in fluid fertilizer. May be tank mixed with dicamba, dimethylamine salt; 2,4-D; bromoxynil; terbutryn; chlorsulfuron; or bromoxynil and MCPA.
	0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to KS, OK and TX. Postemergence. Broadcast. Apply prior to jointing when crop is well tillered (at least 3 tillers) and has developed 2 inch secondary roots throughout the field. Do not use on coarse textured soils with less than 2 percent organic matter. May be tank mixed with dicamba, dimethylamine salt; 2,4-D; bromoxynil; terbutryn; chlorsulfuron; or bromoxynil and MCPA.
	0.34-0.75 (50% WP) (75% WP) (4 lb/gal FlC)	Postharvest. Broadcast. For use on fallow land to be planted to winter wheat. Apply after weed emergence. Tank mix with propham; paraquat; glyphosate; or chlorsulfuron if large weeds are present.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
	Barley (continued)	
	0.5-0.75 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to CO, ID, KS, MT, NE, ND, OK, OR, SD, TX, UT and WA. Postharvest. Broadcast. Apply to actively growing weeds in fall fallow. Tank mix with propham; paraquat; glyphosate; or chlorsulfuron, if large weeds are present.
	0.34-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to CO, ID, KS, MT, NE, ND, OK, OR, SD, TX, UT and WA. Postharvest. Broadcast. Apply to actively growing weeds in spring fallow. Tank mix with propham; paraquat; glyphosate; or chlorsulfuron, if large weeds are present.
	0.63-0.75 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to CO, KS, MT, NE and WY. Postharvest application in fall fallow. Broadcast. Apply prior to weed emergence. Do not plant crops in treated areas earlier than 10 months following fall applications. Do not make another application in spring. Tank mix with paraquat; glyphosate; or other contact herbicide if weed growth is present.
	0.38-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to CO, KS, MT, NE and WY. Spring application in summer fallow. Broadcast. Apply prior to weed emergence. Barley can be seeded 120 days after spring application. Tank mix with paraquat; glyphosate; or other contact herbicide if weed growth is present.
/28005AA	Corn	0.1 ppm (forage, fodder) 0.05 ppm (grain and fresh (including sweet K+CWHR))
	0.25-0.5 (50% WP)	Use limited to IA, KS, MN, MO and NE. Preemergence. Broadcast. Plant corn 1.5 inches deep. Do not use on inbred parent seed corn. Do not use on corn planted in deep furrows. Tank mix with alachlor.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
/28006AA	Corn, Field	0.1 ppm (forage, fodder) 0.05 ppm (grain and fresh (including sweet K+CWHR))
	0.25 (75% WP) (4 lb/gal FlC)	Use limited to IL, IN, IA, KS, KY, MI, MO, NE, OH, SD and WI. Preemergence. Broadcast. Plant corn 1.5 inches deep. Use on hybrid seed corn only if both parent corn varieties are known to be tolerant to metribuzin and other tank mix chemicals. Tank mix with atrazine and alachlor; atrazine and metolachlor; alachlor and bladex; or bladex and metolachlor.
/14013AA	Potato	0.6 ppm 3 ppm (processed food (including potato chips)) 3 ppm (processed feed (dried potato waste)) Sixty day preharvest interval. Do not apply more than 1 lb a.i./A per crop season. General Information: Do not use on early maturing smooth-skinned white or red-skinned varieties when applying postemergence. Apply only to those varieties that are known to be tolerant to metribuzin. Crop injury may result when used on sands or loamy sands containing 0.5 to 1 percent organic matter. Do not use on any soil containing less than 0.5 percent organic matter. Preemergence use on soils containing more than 10 percent organic matter may result in only partial weed control. Do not use on potatoes grown under rill/furrow irrigation.
	0.5-1 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence. Broadcast. Apply as a single application after planting or after drag-off but before crop emergence. May be tank mixed with alachlor or pendimethalin. Do not tank mix with pendimethalin in CA.
	0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Postemergence. Broadcast. Apply as a single application. Three successive days of sunny weather are necessary prior to application. Some chlorosis or minor necrosis may occur to crop plants. Application may follow a preemergence application provided no more than 1 lb a.i./A per season is applied.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Potato (continued)	
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Postemergence application via sprinkler irrigation systems. Apply uniformly in 0.25 to 0.75 inches of water per acre. On sandy soil, apply in 0.25 to 0.5 inch of water. Make a single postemergence or a split postemergence application. Application may follow a preemergence application provided no more than 1 lb a.i./A per season is applied.
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to ID, OR and WA. Postemergence. Broadcast. Make 2 applications, but use only if a preemergence application was not made. Make the first application early in the season and allow at least 14 days between applications. Do not apply within 24 hours of application of other pesticides. On coarse soils containing 0.5 to 1 percent organic matter do not exceed 0.25 lb a.i./A per application in OR and WA. Do not apply after June 30 if treated field is to be planted to crops other than potatoes.
0.13-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to ID. Postemergence. Broadcast. Make 2 applications, but use only if a preemergence application was not made. On coarse soils containing 0.5 to 1 percent organic matter, do not exceed 0.38 lb a.i./A per application. Allow 14 days between applications, and do not apply within 24 hours of application of other pesticides.
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to OR and WA. Postemergence. Broadcast. Make 2 applications, but use only if a preemergence application was not made. Do not exceed the lower dosage on coarse soils containing 0.5 to 1 percent organic matter. Allow 14 days between applications, and do not apply within 24 hours of application of other pesticides.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
/28077AA	Sainfoin	2 ppm (sainfoin and grasses) 7 ppm (sainfoin and grass hay) Twenty-eight day preharvest interval. Do not graze within 28 days after application. General Information: Use only on a dormant established crop. Do not apply after growth begins in spring or before growth ceases in fall. May be applied to stands of sainfoin mixed with grasses; the higher dosages will result in reduction of forage grass stands. Do not use on sand or on soils with less than 0.5 percent organic matter content. In areas west of the Rocky Mountains, avoid using on soils with calcareous surface layer, high levels of lime or sodium and a pH greater than 7.5.
	0.38-1 (50% WP) (75% WP) (4 lb/gal FlC)	Dormant application. Broadcast. Make a single application in the fall after plants become dormant or in the spring before new growth starts. Use the lower dosage on sandy loam, or loamy sand soils in areas other than ID, OR and WA. When application is made to mixed stands with forage grasses, the higher rates may provide partial reduction of forage grass stands. Dosage rates of 0.75 to 1 lb a.i./A may severly reduce stands of forage grass.
	0.25-0.38 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to ID, OR and WA. Dormant application. Broadcast. For the control of common chickweed. Apply to sandy loam or loamy sand soils.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
/15010AA	Soybeans	0.1 ppm (soybeans) 4 ppm (forage, hay) Do not use treated vines for feed or forage for 40 days after application.

General Information: Altona, Coker 102 and 156, Govan, Semmes, Tracy and Vansoy are sensitive to metribuzin and injury may occur if used on these varieties. Determine tolerance to other varieties before implementing as a field practice. Injury may occur if used on soils having a calcareous surface layer or a pH of 7.5 or higher, if used in conjunction with soil applied organic phosphate pesticides, or if atrazine was applied on the soil the previous year. If initial seeding fails to produce a stand, treated fields may be replanted to soybeans, but do not rework soil, or retreat field with a second application. Do not replant treated areas to any crop other than soybeans within 4 months after application as injury to subsequent crops may result. For crop rotations in fields treated with chloramben, trifluralin, glyphosate, oryzalin, profluralin, fluchloralin, or metolachlor, follow instructions on individual product labels. When applying preemergence, use the higher dosage for minimum till or no-till soybeans, and in the States of GA and SC. May be applied in conjunction with fluid fertilizers, or may be impregnated on dry bulk fertilizer. Plant seeds at least 1.5 inches deep. Do not use on coarse textured soils with less than 2 percent organic matter, or on sandy soils when applying preemergent broadcast applications. Guidelines for preplant incorporated, tank mixed applications that are followed by a preemergence surface application are: On coarse textured soils, do not use on sand soils with less than 1 percent organic matter, or on loamy sand or sandy loam soils with less than 0.5 percent organic matter; On coarse textured soils with a calcareous surface layer or a pH of 7.5 or higher, do not use on sand soils with less than 2 percent organic matter, or on loamy sand or sandy loam soils with less than 1 percent organic matter; On medium and fine textured soils, do not use when the organic matter content is less than 0.5 percent.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Soybeans (continued)	
0.25-0.5 (4 lb/gal FlC)	Preplant. Broadcast. Apply within 4 weeks of planting. Tank mix with oryzalin.
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Preplant. Soil incorporation. Apply within 2 weeks of planting. Tank mix with trifluralin; alachlor; fluchloralin; or metolachlor.
0.25-0.5 (4 lb/gal FlC)	Preplant. Soil incorporation. Apply within 7 days of planting. Tank mix with alachlor.
0.25-0.5 (50% WP) (4 lb/gal FlC)	Preplant. Soil incorporation. Apply within 10 days of planting. Tank mix with profluralin.
0.13-0.5 (4 lb/gal FlC)	Preplant. Soil incorporation. Apply within 2 weeks of planting. Tank mix with chloramben and trifluralin.
0.75 (4 lb/gal FlC)	Use limited to silty clay to heavy clay soils in the Mississippi Delta. Preplant. Soil incorporation. Apply within 7 days of planting. Tank mix with alachlor.
0.5-0.63 (75% WP) 0.75 (4 lb/gal FlC)	Use limited to silty clay to clay soils of the Mississippi Delta. Preplant. Soil incorporation. Apply within 2 weeks of planting. Tank mix with alachlor or metolachlor.
0.5-0.63 (4 lb/gal FlC)	Use limited to silty clay to heavy clay soils in the Mississippi Delta. Preplant. Broadcast. Apply within 4 weeks of planting. Tank mix with oryzalin.
0.25-0.5 (4 lb/gal FlC)	Preplant. Soil incorporation. Follow with preemergence surface application. Tank mix with trifluralin; alachlor; pendimethalin; or metolachlor.
	AND
0.13-0.5 (4 lb/gal FlC)	Preemergence. Broadcast.

4-AMINO-6-(1,1-DIMETHYLETHYL)-3-(METHYLTHIO)-1,2,4-TRIAZIN-5(4H)-ONE

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Soybeans (continued)	
0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Preplant. Soil incorporation. Broadcast. For use on fine textured soils. Tank mix with alachlor; fluchloralin; metolachlor; pendimethalin; or trifluralin.
	AND
0.13-0.38 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence. Broadcast.
0.38 (50% WP) (75% WP) (4 lb/gal FlC)	Preplant. Soil incorporation. For use on fine textured soils having a calcareous surface layer or a pH of 7.5 or higher, and in areas where soils within a field vary extremely in texture or organic matter content. Tank mix with trifluralin; alachlor; pendimethalin; fluchloralin; or metolachlor.
	AND
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence. Reduce dosage by 0.13 lb a.i./A when applying on soils with over 4 percent organic matter and having a calcareous surface layer or a pH of 7.5 or higher.
0.25 (50% WP) (75% WP) (4 lb/gal FlC)	Preplant. Soil incorporation. For use on coarse textured soils. Tank mix with trifluralin; alachlor; pendimethalin; fluchloralin; or metolachlor.
	AND
0.13-0.25 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Soybeans (continued)	
0.25 (50% WP) (75% WP) (4 lb/gal FlC)	Preplant. Soil incorporation. For use on medium textured soils having a calcareous surface layer or a pH of 7.5 or higher, and in areas where soils within a field vary extremely in texture or organic matter content. Tank mix with trifluralin; alachlor; pendimethalin; fluchloralin; or metolachlor.
	AND
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence. Reduce dosage by 0.13 lb a.i./A when applying on soils with over 4 percent organic matter and having a calcareous surface layer or a pH of 7.5 or higher.
0.38 (50% WP) (75% WP) (4 lb/gal FlC)	Preplant. Soil incorporation. For use on medium textured soils. Tank mix with trifluralin; alachlor; pendimethalin; fluchloralin; or metolachlor.
	AND
0.13-0.38 (50% WP) (75% WP) (4 lb/gal FlC)	Preemergence.
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to the Southern States and Eastern Coastal Plains (AL, AR, FL, GA, LA, MS, NC, OK, SC, TN, TX, Southeastern MO (Bootheel Region), and Coastal Plains of DE, MD, NJ and VA). Preplant. Soil incorporation. Incorporate and plant within 7 days after application. Tank mix with pendimethalin.
	AND
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to the Southern States and Eastern Coastal Plains (AL, AR, FL, GA, LA, MS, NC, OK, SC, TN, TX, Southeastern MO (Bootheel Region), and Coastal Plains of DE, MD, NJ and VA). Preemergence. May be preceded by preplant soil incorporation of pendimethalin alone.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Soybeans (continued)	
0.38-0.5 (50% WP) (4 lb/gal FlC)	Use limited to the Northeastern and Northcentral States (IL, IN, IA, KS, KY, MI, MN, NE, NY, ND, OH, PA, SD, WI, MO (except Bootheel Region), and except for the Coastal Plain, DE, MD, NJ and VA).
0.25-0.63 (75% WP)	Preplant. Soil incorporation. Incorporate and plant within 7 days after application. Tank mix with pendimethalin.
	AND
0.38-0.5 (50% WP) (4 lb/gal FlC)	Use limited to the Northeastern and Northcentral States (IL, IN, IA, KS, KY, MI, MN, NE, NY, ND, OH, PA, SD, WI, MO (except Bootheel Region), and except for the Coastal Plain, DE, MD, NJ and VA).
0.25-0.63 (75% WP)	Preemergence. May be preceded by preplant soil incorporation of pendimethalin alone.
0.38-0.88 (75% WP)	Preemergence. Broadcast or band.
0.38-0.5 (4 lb/gal FlC)	Use limited to AL, LA, MS and TN. Preemergence. Broadcast. For use on medium textured soils.
0.5-0.63 (4 lb/gal FlC)	Use limited to AL, LA, MS and TN. Preemergence. Broadcast. For use on fine textured soils.
0.75-1 (75% WP)	Use limited to the Mississippi Delta. Preemergence. Broadcast or band.
0.25-0.38 (4 lb/gal FlC)	Preemergence. Broadcast. For use on alkaline soils. Use the lower dosage on medium textured soils and the higher dosage on fine textured soils containing more than 0.5 percent organic matter. Use the higher dosage where soil pH is less than 7.5 and weed pressure is heavy. The lower dosage may be used as a preemergence surface application following preplant soil incorporation of trifluralin or profluralin.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Soybeans (continued)	
0.25-0.38 (75% WP)	Use limited to calcareous soils of MN and ND. Preemergence. Broadcast or band. Apply the lower dosage on medium textured soils, and the higher dosage on fine textured soils regardless of soil organic matter content, and where soil pH is less than 7.5 and weed pressure is heavy. The lower dosage may be applied alone or as a preemergence surface application following a preplant application of trifluralin.
0.38-0.75 (4 lb/gal FlC)	Use limited to the Midsouth. For the control of hophornbeam copperleaf. Preemergence. Broadcast.
0.38-1 (75% WP)	Preemergence. Broadcast. For use in areas where soybeans will be planted in preformed beds, cover crops or in previous crop residues. Apply with a nonionic surfactant. Tank mix with paraquat.
0.25-1 (75% WP)	Preemergence. Broadcast. For use in areas where soybeans will be planted in preformed beds, cover crops or in previous crop residues. Apply with a nonionic surfactant. Tank mix with paraquat and alachlor.
0.25-0.5 (75% WP)	Preemergence. Broadcast. For use in areas where soybeans will be planted in preformed beds, cover crops or in previous crop residues. Apply with a nonionic surfactant within 2 days after planting. Tank mix with paraquat and oryzalin.
0.13-0.5 (50% WP) (4 lb/gal FlC)	Preemergence. Broadcast. Plant seed 1.5 to 2 inches deep on flat or raised seedbeds. Tank mix with alachlor.
0.13-0.5 (75% WP) (4 lb/gal FlC)	Preemergence. Broadcast. Apply within 2 days after planting. Tank mix with oryzalin.
0.25-0.63 (75% WP)	Preemergence. Broadcast. Tank mix with chloramben.
0.13-0.5 (4 lb/gal FlC)	

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Soybeans (continued)	
0.38-0.5 (50% WP) (4 lb/gal FlC)	Preemergence. Broadcast or band. May be preceded by a preplant soil incorporation of trifluralin; profluralin; pendimethalin; fluchloralin; or metolachlor.
0.25-0.62 (75% WP)	
0.13-0.5 (75% WP) (4 lb/gal FlC)	Preemergence. Broadcast. Tank mix with linuron and alachlor; linuron and metolachlor; or alachlor, sodium naptalam and sodium dinoseb.
0.25-0.62 (75% WP)	Preemergence. Broadcast or band. Tank mix with alachlor.
0.25-0.5 (4 lb/gal FlC)	Preemergence. Broadcast. Sequential application. Apply after a preplant soil incorporation of fluchloralin.
	OR
0.25-0.5 (4 lb/gal FlC)	Preplant. Soil incorporation. Tank mix with fluchloralin.
0.13-0.5 (4 lb/gal FlC)	Preemergence. Broadcast. Tank mix with chloramben and alachlor; chloramben and pendimethalin; chloramben and metolachlor; or alachlor, sodium naptalam and sodium dinoseb.
	OR
0.13-0.5 (4 lb/gal FlC)	Preplant. Soil incorporation. Tank mix with chloramben and alachlor; chloramben and pendimethalin; chloramben and metolachlor; or alachlor, sodium naptalam and sodium dinoseb.
1 (75% WP)	Use limited to silty clay to heavy clay soils of the Mississippi Delta. Preemergence. Broadcast or band. Tank mix with alachlor.

4-AMINO-6-(1,1-DIMETHYLETHYL)-3-(METHYLTHIO)-1,2,4-TRIAZIN-5(4H)-ONE

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Soybeans (continued)	
0.5-0.75 (50% WP) (4 lb/gal FlC)	Use limited to silty clay to heavy clay soils of the Mississippi Delta. Preemergence. Broadcast. Plant seed 1.5 to 2 inches deep on flat or raised seedbeds. Tank mix with alachlor.
0.13-0.5 (4 lb/gal FlC)	Use limited to the Southern States and Eastern Coastal Plains. Preemergence. Broadcast. Tank mix with pendimethalin.
0.25-0.5 (4 lb/gal FlC)	Use limited to Northeastern and Northcentral States. Preemergence. Broadcast. Tank mix with pendimethalin.
0.5-0.63 (75% WP) (4 lb/gal FlC)	Use limited to silty clay to heavy clay soils of the Mississippi Delta. Preemergence. Broadcast. Apply within 2 days after planting. Tank mix with oryzalin.
0.5-0.75 (4 lb/gal FlC)	Use limited to silty clay to heavy clay soils of the Mississippi Delta. Preemergence. Broadcast. Tank mix with chloramben.
1 (75% WP)	
0.75 (75% WP) 0.5-0.75 (4 lb/gal FlC)	Use limited to silty clay to heavy clay soils of the Mississippi Delta. Preemergence. Broadcast or band. May be preceded by a preplant soil incorporation of trifluralin; profluralin; pendimethalin; fluchloralin; or metolachlor.
0.38-0.75 (4 lb/gal FlC)	Use limited to OH. Preemergence. Broadcast or band. For use on medium and fine textured soils. Tank mix with alachlor.
0.25-0.5 (4 lb/gal FlC)	For use in minimum till or no-till soybeans. Preemergence. Broadcast. Tank mix with paraquat and glyphosate; or alachlor and glyphosate.
0.38-0.5 (4 lb/gal FlC)	For use in minimum till or no-till soybeans. Preemergence. Broadcast. Apply with ground equipment. Tank mix with paraquat; paraquat and alachlor; paraquat and oryzalin; or alachlor and glyphosate.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
	Soybeans (continued)	
	0.5-0.75 (4 lb/gal FlC)	Use limited to silty clay to heavy clay soils of the Mississippi Delta. For use in minimum till or no-till soybeans. Preemergence. Broadcast. Apply with ground equipment. Tank mix with paraquat; paraquat and alachlor; paraquat and oryzalin; or alachlor and glyphosate.
	0.25-0.5 (75% WP) (4 lb/gal FlC)	Use limited to the Southern and Southeastern States (AL, AR, FL, GA, KY, CA, MS, MO, NC, OK, SC, TN and TX). Postemergence. Directed spray. Apply when soybeans are at least 8 to 12 inches tall. Do not spray higher than 2 inches on soybean stem. Apply with a nonionic surfactant. If needed, a second application may be made after 7 days. May be tank mixed with 2,4-DB.
/25003AA	Sugarcane	0.1 ppm 0.3 ppm (molasses, processed feed) 0.5 ppm (bagasse, processed feed) 2 ppm (molasses, processed food) Sixty day preharvest interval in FL, LA and TX. Seventeen month preharvest interval in HI. Do not use treated crop for feed or forage in FL, LA and TX. Do not apply more than 8 lb a.i./A per crop cycle in HI.
		General Information: Do not use on sugarcane grown on sand in FL, LA and TX.
	2-4 (50% WP) (70% WP) (75% WP) (4 lb/gal FlC)	Use limited to HI. Preemergence or very early postemergence. Broadcast. Apply within 2 weeks after planting, prior to cane emergence or shortly after emergence (spike stage).
		OR
	2-4 (50% WP) (70% WP) (75% WP) (4 lb/gal FlC)	Use limited to HI. Early postemergence. Broadcast. Apply over cane before weeds are 3 inches tall. Application may be delayed 4 to 6 weeks provided weeds are less than 3 inches tall.
		OR

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Sugarcane (continued)	
2-4 (50% WP) (70% WP) (75% WP) (4 lb/gal FlC)	Use limited to HI. Postemergence. Broadcast. Apply prior to close-in and before weeds are 3 inches tall.
4-6 (70% WP) (75% WP) (4 lb/gal FlC)	Use limited to HI. Preemergence. Aerial application. Apply to irrigated cane within 2 weeks after planting.
	OR
4-6 (70% WP) (75% WP) (4 lb/gal FlC)	Use limited to HI. Early postemergence. Aerial application. Apply over irrigated cane before weeds are 3 inches tall. Application may be delayed 4 to 6 weeks provided weeds are less than 3 inches tall.
	OR
2-4 (70% WP) (4 lb/gal FlC)	Use limited to HI. Postemergence. Aerial application. Apply to irrigated cane prior to close-in and before weeds are 3 inches tall.
2.5-5 (50% WP) (70% WP) (75% WP) (4 lb/gal FlC)	Use limited to HI. Spot treatment. Dilute the product in sufficient water to prepare 30 to 50 gallons of finished spray, and spot spray on missed areas or hard to control weeds.
1.5-3 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to LA and TX. Preemergence or postharvest. Broadcast. Apply in the fall after planting but before cane emergence, or to the stubble after harvest. Make a second application in early spring prior to new cane growth. If necessary, a third application may be made in the late spring at layby.
1-2 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to FL. Postemergence. Directed spray. Apply after sugarcane is 12 inches tall but before row crossing. Do not apply more than 2 lb a.i./A per crop season.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
/11005AA	Tomato	0.1 ppm 2 ppm (dried tomato pomace, processed feed) Seven day preharvest interval. Do not forage or feed treated foliage to livestock. Do not apply more than 1 lb a.i./A within a 35 day period per crop season except in the case of directed sprays. General Information: Do not treat seeded or transplanted tomatoes until plants have reached the 5- to 6-leaf stage, or until transplants have recovered from transplant shock and new growth has started. Apply only if there have been at least 3 successive days of sunny weather prior to application, or crop injury may occur when applying postemergent. Do not apply within 24 hours of treatment with other pesticides. When applying postemergent to established tomatoes, do not tank mix with other pesticides. Tomato varieties vary in their resistance to metribuzin; therefore, determine varietal tolerance prior to large scale use. Do not use hot caps within 7 days before or at any time after application. Directed sprays should be used in fields with severe weed pressure or in fields with hard to control weeds. Do not apply to soils containing a calcareous surface layer or a pH of 7.5 or higher. Allow a minimum of 14 days between applications. Do not apply within 14 days of transplanting.
	0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to areas east of the Rocky Mountains (except FL). Pretransplant. Broadcast. Incorporate to a depth of 2 to 4 inches. Use the higher dosage for heavy weed pressure or hard-to-control weeds. May be tank mixed with trifluralin.
	0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to areas other than CA. Pretransplant. Broadcast. Incorporate to a depth of 2 to 4 inches. May be tank mixed with trifluralin.
	0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to areas east of the Rocky Mountains (except FL). Postemergence. Broadcast. For use on established tomatoes. Make 1 or more applications per crop season. Use the higher dosage for heavy weed pressure or hard-to-control weeds.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Tomato (continued)	
0.5-1 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to areas east of the Rocky Mountains (except FL). Postemergence. Directed spray. Do not allow spray to contact tomato foliage. For use on established tomatoes. Make 1 or more applications per crop season. Use the higher dosage for heavy weed pressure or hard-to-control weeds.
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to areas other than FL. Postemergence. Broadcast. Apply to established tomatoes as a single or split application. For split applications, apply 0.25 to 0.38 lb a.i./A per application. Do not exceed 2 treatments per crop season.
0.25-0.38 (50% WP) (75% WP) (4 lb/gal FlC)	Postemergence. Broadcast. For use on established tomatoes. Make 1 or more applications per crop season. Use the higher dosage for heavy weed pressure or hard-to-control weeds.
0.5-1 (50% WP) (75% WP) (4 lb/gal FlC)	Postemergence. Directed spray. Do not allow spray to contact tomato foliage. For use on established tomatoes. Make 1 or more applications per crop season. Use the higher dosage for heavy weeds pressure or hard-to-control weeds.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
/28065AA	Wheat	0.75 ppm (grain) 1 ppm (straw) **2 ppm (forage)** 3 ppm (milled fractions (except flour) of processed food and feed) Do not graze treated fields for 14 days following application. Do not graze treated fields after a fallow application. General Information: Do not apply more than once per crop. Do not use on any soils containing less than 1 percent organic matter. Do not use on irrigated wheat or crop injury may occur. Temporary chlorosis may occur after application especially if frost occurs. Not recommended for use if soils are high in lime or sodium or have a pH greater than 7.7. Crop injury may occur if secondary roots have not developed at time of application. Do not plant spring seeded cereals following fall fallow applications. Do not apply in the spring if an application was made in the fall. Do not use on the winter wheat varieties Morex, Glenn or Morvain 3.
	(dryland winter)	
	0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to areas east of the Cascades in ID, OR, UT and WA on varieties Daws, Gaines, Hyslop, Luke, McDermid, Moro, Nugaines, Paha, Peck, Stevens and Wanser, and in MT on the varieties Centurk, Cheyenne and Winalta. Postemergence. Broadcast. Apply after wheat has fully tillered and developed secondary roots, but before jointing. Do not use on any soils containing less than 1 percent organic matter. Do not use if soils are high in lime or sodium or have a pH greater than 7.7. Temporary chlorosis may occur, especially if the crop is under stress or if application is made in fluid fertilizers. May be tank mixed with dicamba, dimethylamine salt; 2,4-D; terbutryn; or bromoxynil and MCPA.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Wheat (continued)	
0.19-0.25 (75% WP)	Use limited to areas east of the Cascades in ID, OR, UT and WA on varieties Daws, Gaines, Hyslop, Luke, McDermid, Moro, Nugaines, Paha, Peck, Stevens and Wanser, and in MT on the varieties Centurk, Cheyenne and Winalta. Postemergence. Broadcast. Broadleaf weed control. Apply only in the spring after wheat has started to grow and has a well established secondary root system with at least 3 to 4 tillers. Tank mix with bromoxynil; or bromoxynil and MCPA.
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to KS, OK and TX on the varieties Tam W101, Tam 105, and Newton. Postemergence. Broadcast. Apply in the fall after wheat has a minimum of 3 tillers and 4 secondary roots at least 2 inches in length, but before winter dormancy. May be tank mixed with dicamba, dimethylamine salt; 2,4-D; bromoxynil; or bromoxynil and MCPA.
0.25-0.75 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to KS, OK and TX on the varieties Tam W101, Tam 105, and Newton. Postemergence. Broadcast. Apply in the spring after wheat has fully tillered and has developed secondary roots at least 2 inches in length. May be tank mixed with dicamba, dimethylamine salt; 2,4-D; bromoxynil; or bromoxynil and MCPA.
0.25-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to KS, OK and TX. Postemergence. Broadcast. Apply prior to jointing when crop is well tillered (at least 3 tillers) and has developed 2 inch secondary roots throughout the field. Do not use on coarse textured soils with less than 2 percent organic matter. May be tank mixed with dicamba, dimethylamine salt; 2,4-D; bromoxynil; terbutryn; chlorsulfuron; or bromoxynil and MCPA.
0.34-0.75 (4 lb/gal FlC)	Postharvest. Broadcast. For use on fallow land to be planted to winter wheat. Apply after weed emergence. Tank mix with propham; paraquat; glyphosate; or chlorsulfuron if large weeds are present.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Wheat (continued)	
0.5-0.75 (4 lb/gal FlC)	Use limited to CO, ID, KS, MT, NE, ND, OK, OR, SD, TX, UT and WA. Postharvest. Broadcast. Apply to actively growing weeds in fall fallow. Tank mix with propham; paraquat; glyphosate; or chlorsulfuron if large weeds are present.
0.34-0.5 (4 lb/gal FlC)	Use limited to CO, ID, KS, MT, NE, ND, OK, OR, SD, TX, UT and WA. Postharvest. Broadcast. Apply to actively growing weeds in spring fallow. Tank mix with propham; paraquat; glyphosate; or chlorsulfuron if large weeds are present.
0.63-0.75 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to CO, KS, MT, NE and WY. Postharvest application in fall fallow. Broadcast. apply prior to weed emergence. Do not plant crops in treated areas earlier than 10 months following fall applications. Do not make another application in the spring. Tank mix with paraquat; glyphosate or other contact herbicide if weed growth is present.
0.38-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to CO, KS, MT, NE and WY. Spring application in summer fallow. Broadcast. Apply prior to weed emergence. Wheat can be seeded 120 days after spring application. Tank mix with paraquat; glyphosate or other contact herbicide if weed growth is present.
(wheat, fallow)	
0.5-0.63 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to ID, OR, UT and WA. Postharvest application in fall fallow. Broadcast. Apply prior to weed emergence. Do not plant crops in treated areas earlier than 10 months following fall applications. May be tank mixed with propham. Tank mix with paraquat or other contact herbicide if weed growth is present.
0.38-0.5 (50% WP) (75% WP) (4 lb/gal FlC)	Use limited to ID, OR, UT and WA. Spring application in summer fallow. Broadcast. Apply prior to weed emergence. Wheat can be seeded 120 days after spring application. May be tank mixed with propham after January 1 and before March 1.

	Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
	TERRESTRIAL NON-FOOD CROP	
	(Ornamental Plants and Forest Trees)	
/33017AA	Bermudagrass	General Information: For use on established common bermudagrass growing on golf course fairways and commercial sod farms. Apply in 40 gallons of water per acre. Do not apply more than 1.5 lb a.i./A in a single growing season. Do not apply more than once to dormant turf, or more than twice to actively growing turf in a single growing season. Do not apply to greens, tees, aprons or other closely mowed turf. Do not mow for 3 days following treatment for maximum weed control.
	0.5 (50% WP) (75% WP)	Use limited to AL, AR, FL, GA, LA, MS, NC, SC, TN, TX and VA. Broadcast. Apply to actively growing weeds in dormant turf prior to green up.
	0.25-0.5 (50% WP) (75% WP)	Use limited to AL, AR, FL, GA, LA, MS, NC, SC, TN, TX and VA. Broadcast. Apply to actively growing turf. Repeat application if necessary, with a minimum of 1 week between applications. Temporary discoloration may occur.
	(Noncrop, Wide Area, and General Outdoor Treatments)	
/670000A	Noncrop Areas	
	1-6 (50% WP) (75% WP) (4 lb/gal FlC)	Broadcast. Apply to emerged weeds. May be tank mixed with paraquat or glyphosate.
/670050A	Railroad Rights-of-Way	
	6-7.5 (75% WP)	Broadcast. Apply to bare soil.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations

AERIAL AND TANK MIX APPLICATIONS

9001500
AAAAAAA **Aerial Application**

--	Refer to TERRESTRIAL FOOD CROP (Agricultural Crops) Alfalfa, Asparagus, Barley, Corn, Corn (Field), Potato, Sainfoin, Soybeans, Sugarcane, Wheat

9900300
AAAAAAA Tank Mix

--	Refer to TERRESTRIAL FOOD CROP (Agricultural Crops) Barley, Corn, Corn (Field), Potato, Soybeans, Tomato, Wheat TERRESTRIAL NON-FOOD CROP (Noncrop, Wide Area, and General Outdoor Treatments) Noncrop Areas

4-AMINO-6-(1,1-DIMETHYLETHYL)-3-(METHYLTHIO)-1,2,4-TRIAZIN-5(4H)-ONE

Listing of Registered Pesticide Products by Site and Formulation

&050.0002 50% formulation intermediate
  4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one (101101)
    003125-00305

&050.0006 50% wettable powder
  4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one (101101)
    000352-00375 003125-00277 039926-00002

&070.0006 70% wettable powder
  4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one (101101)
    003125-00294

&075.0006 75% wettable powder
  4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one (101101)
    000352-00390 000352-00407 003125-00325

&104.0014 4 lb/gal flowable concentrate
  4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one (101101)
    000352-00382 003125-00314 039926-00001

9999999 State Label Registration

LA Reg. No.
037820-08433

Appendix A

Listing of Common Chemical Names Used on the Entry

Chemical Code	Common Name (source)	EPA Acceptable Common/Chemical Name
030001	2,4-D	2,4-dichlorophenoxyacetic acid
030501	MCPA	2-methyl-4-chlorophenoxyacetic acid
030703	**sodium naptalam**	**N-1-naphthylphthalamic acid, sodium salt**
030801	2,4-DB	4-(2,4-dichlorophenoxy)butyric acid
047601	propham	isopropyl carbanilate
061601	paraquat	paraquat dichloride
100101	bladex	2-[[4-chloro-6-(ethylamino)-5-triazin-2-yl]amino]-2-methyl propionitrile
103601	glyphosate	glyphosate, isopropylamine salt
118601	chlorsulfuron	2-chloro-N-[((4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino)carbonyl]benzenesulfonamide

Appendix B

Listing of Registration Numbers by Site and Formulation

TERRESTRIAL FOOD CROP

(Agricultural Crops)

/28069AA	**Alfalfa**		
	(50% WP)	000352-00375	003125-00277
	(75% WP)	000352-00390	003125-00325
	(4 lb/gal FlC)	000352-00382	003125-00314
/16002AA	**Asparagus**		
	(50% WP)	000352-00375	003125-00277
	(75% WP)	000352-00390	003125-00325
	(4 lb/gal FlC)	003125-00314	
/28063AA	**Barley**		
	(50% WP)	000352-00375	
	(75% WP)	000352-00390	003125-00325
	(4 lb/gal FlC)	000352-00382	003125-00314
/28005AA	**Corn**		
	(50% WP)	003125-00277	
/28006AA	**Corn, Field**		
	(75% WP)	003125-00325	
	(4 lb/gal FlC)	003125-00314	

4-AMINO-6-(1,1-DIMETHYLETHYL)-3-(METHYLTHIO)-1,2,4-TRIAZIN-5(4H)-ONE

Appendix B

Listing of Registration Numbers by Site and Formulation (continued)

/14013AA **Potato**
(50% WP)
000352-00375 003125-00277 039926-00002

(75% WP)
000352-00390 003125-00325

(4 lb/gal FlC)
000352-00382 003125-00314 039926-00001

/28077AA **Sainfoin**
(50% WP)
000352-00375 003125-00277

(75% WP)
000352-00390 003125-00325

(4 lb/gal FlC)
000352-00382 003125-00314

/15010AA **Soybeans**
(50% WP)
000352-00375 003125-00277 039926-00002

(75% WP)
000352-00390 003125-00325

(4 lb/gal FlC)
000352-00382 003125-00314 039926-00001

/25003AA **Sugarcane**
(50% WP)
000352-00375 003125-00277

(70% WP)
003125-00294

(75% WP)
000352-00390 003125-00325

(4 lb/gal FlC)
000352-00382 003125-00314

Appendix B

Listing of Registration Numbers by Site and Formulation (continued)

/11005AA Tomato
(50% WP)
000352-00375 003125-00277

(75% WP)
000352-00390 003125-00325

(4 lb/gal FlC)
000352-00382 003125-00314

/28065AA Wheat

(dryland winter)
(50% WP)
000352-00375

(75% WP)
000352-00390 003125-00325

(4 lb/gal FlC)
000352-00382 003125-00314

(wheat, fallow)
(50% WP)
000352-00375

(75% WP)
000352-00390 003125-00325

(4 lb/gal FlC)
000352-00382 003125-00314

TERRESTRIAL NON-FOOD CROP

(Ornamental Plants and Forest Trees)

/33017AA Bermudagrass
(50% WP)
003125-00277

(75% WP)
003125-00325

Appendix B

Listing of Registration Numbers by Site and Formulation (continued)

(Noncrop, Wide Area, and General Outdoor Treatments)

/670000A **Noncrop Areas**

(50% WP)
000352-00375

(75% WP)
000352-00390

(4 lb/gal FlC)
000352-00382

/670050A **Railroad Rights-of-Way**

(75% WP)
000352-00407

REQUIREMENT FOR SUBMISSION OF GENERIC DATA

A. This portion of the guidance document is a Notice issued under the authority of FIFRA sec. 3(c)(2)(B). The tables following this section list the data required for maintaining the registrability of each product.

EPA has determined that additional generic data described in Table A must be submitted to EPA for evaluation in order to maintain in effect the registration(s) of your product(s) identified as an attachment to the cover letter accompanying this guidance document. As required by FIFRA sec. 3(c)(2)(B), you are required to take appropriate steps to comply with this Notice.

EPA may suspend the registration of each of those products unless, within the specified time, you have informed EPA how you will satisfy the requirements of this Notice. Any such suspension will remain in effect until you have complied with the terms of this Notice.

B. What Generic Data[1] Must be Submitted. You may determine which generic data you must submit by consulting Table A at the end of this chapter. That table lists the generic data needed to evaluate the continued registrability of all products, and the dates by which the data must be submitted. The required studies must be conducted in accordance with EPA approved protocols (such as those contained in the Pesticide Assessment Guidelines [2] or data collected under the approved protocols of the Organization for Economic Cooperation and Development (OECD). If you do not wish to develop data in support of certain uses appearing in your labeling, you may delete those uses at the time you submit your revised labeling.

For certain kinds of testing (generally ecological effects), EPA requires the test substance to be a "typical formulation," and in those cases EPA needs data of that type for each major formulation category (e.g., emulsifiable concentrates, wettable powders, granulars, etc.) These are classified as generic data and when needed are specified in Table A. EPA may possess data on certain "typical formulations" but not others. Note: "Typical formulation" data should not be confused with product-specific data (Table B) which are required on each formulation. Product-specific data are further explained in Chapter III of this document.

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[1] Generic data pertain to the properties or effects of a particular ingredient, and thus are relevant to an evaluation of the risks of all products containing that ingredient, regardless of the product's unique composition or specific use. Product-specific data relate only to the properties or effects of a product with a particular composition (or a group of products with closely similar composition).

[2] The Pesticide Assessment Guidelines are available in hard copy or microfiche from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161.

C. Options Available for Complying With Requirements to Submit Data

Within 90 days of your receipt of this Notice you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" [EPA Form 8580-1, Appendix II-3] for each of your products. On that form you must state which of the following methods you will use to comply with the requirements of this Notice:

1. (a) Notify EPA that you will submit the data, and

(b) either submit the existing data you believe will satisfy the requirement, or state that you will generate the data by conducting testing. If the test procedures you will use deviate from (or are not specified in) the Pesticide Assessment Guidelines or protocols contained in the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must enclose the protocols you will use.

OR

2. Notify EPA that you have entered into an agreement with one or more other registrants to jointly develop (or share in the cost of developing) the data. If you elect this option, you must notify EPA which registrant(s) are parties to the agreement.

OR

3. File with EPA a completed "Certification of Attempt to Enter Into an Agreement With Other Registrants for Development of Data" (EPA Form 8580-6, Appendix II-4)*/

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*/ FIFRA sec. 3(c)(2)(B) authorizes joint development of data by two or more registrants, and provides a mechanism by which parties can obtain an arbitrator's decision if they agree to jointly develop data but fail to agree on all the terms of the agreement. The statute does not compel any registrant to agree to develop data jointly.

(Footnote continued on next page)

OR

4. Request that EPA amend your registration by deleting the uses for which the data are needed. (This option is not available to applicants for new products.)

OR

5. Request voluntary cancellation of the registration(s) of your products for which the data are needed. (This option is not available to applicants for new products.)

D. Procedures for Requesting Changes in Testing Methodology and Extensions of Time

EPA recognizes that you may disagree with our conclusions regarding the appropriate ways to develop the required data or how quickly the data must be submitted. If the test procedures you plan to use deviate from (or are not specified in) the registration guidelines or protocols contained in the reports of the Expert Groups to the Chemical Groups, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit the protocol for Agency review prior to the initiation of the test.

If you think that you will need more time to generate the required data than is allowed by EPA's schedule, you may submit a request for an extension of time. The extension request must be submitted in writing to the Product Manager.

(Footnote continued from previous page)

In EPA's opinion, joint data development by all registrants subject to a data requirement or a cost-sharing agreement among all such registrants is clearly in the public interest. Duplication of testing could increase costs, tie up testing facilities, and subject an unnecessarily large number of animals to testing.

As noted earlier, EPA has discretion to suspend the registration of a product when a registrant fails to submit data required under FIFRA Section 3(c)(2)(B). EPA has concluded that it should encourage joint testing rather than duplicative testing, and that suspension should be withheld in certain cases to further this goal. Accordingly, if (1) a registrant has informed us of his intent to develop and submit data required by this Notice; and (2) a second registrant informs EPA that it has made a bona fide offer to the first registrant to share in the expenses of the testing [on terms to be agreed upon or determined by arbitration under FIFRA Section 3(c)(2)(B)(iii)]; and (3) the first registrant has declined to agree to enter into a cost-sharing agreement, EPA will not suspend the second firm's registration.

The extension request should state the reasons why you believe that an extension is appropriate. While EPA considers your request, you must strive to meet the deadline for submitting the required data.

III. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Note: Unless stated otherwise in Section I, Regulatory Position and Rationale, this Section applies only to manufacturing use products, not to end use products.

A necessary first step in determining which statements must appear on your product's label is the completion and submission to EPA of product-specific data* listed on the form entitled "Product Specific Data Report" (EPA Form 8580-4, Appendix III-1) to fill gaps identified by EPA concerning your product. Under the authority of FIFRA sec. 3(c)(2)(B), EPA has determined that you must submit these data to EPA in order to reregister your product(s). All of these data must be submitted not later than six months after you receive this guidance document.

Table B--Product-Specific Data Requirements for Manufacturing Use Products--lists the product specific data you must submit. Data that are required to be submitted are identified in the column of those tables entitled "Must Data By Submitted Under §3(c)(2)(B)."

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*/ Product specific data pertain to data that support the formulation which is marketed; it usually includes product chemistry data and acute toxicity data.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframes Listed Below 1/
§158.120 Product Chemistry						
Product Identity:						
61-2 - Product Identity and Disclosure of Ingredients	TGAI	R	☒	☐		6 Months
61-3- Discussion of Formation of Impurities	TGAI	R	☒	☐	2	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	TGAI	CR	☒	☐	3	12 Months
Physical and Chemical Characteristics						
63-2 - Color	TGAI	R	☐	☒		
63-3 - Physical State	TGAI	R	☐	☒		
63-4 - Odor	TGAI	R	☒	☐		6 Months
63-5 - Melting Point	TGAI	R	☒	☐		6 Months
63-6 - Boiling Point	TGAI	R	☐	☒		
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	R	☒	☐	4	6 Months
63-8 - Solubility	TGAI or PAI	R	☒	☐	5	6 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	No	Footnote Number	Data Must Be Submitted Within Timeframes Listed Below 1/
§158.120 Product Chemistry (Continued)						
Physical and Chemical Characteristics (Continued)						
63-9 - Vapor Pressure	PAI	R	☐	☒		
63-10 - Dissociation constant	PAI	R	☒	☐		6 Months
63-11 - Octanol/water partition coefficient	PAI	R	☒	☐		6 Months
63-12 - pH	TGAI	R	☒	☐		6 Months
63-13 - Stability	TGAI	R	☒	☐	6	6 Months
Other Requirements:						
64-1 - Submittal of samples	TGAI, PAI	CR	☐	☒		

: :

TGAI = Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient; R = Required; CR = Conditionally Required

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.

° 6 Month Due Date is December 31, 1985.

° 12 Month Due Date is June 30, 1985.

2/ A discussion of each impurity believed to be present at >0.1% based on knowledge of beginning materials, all possible chemical reactions and any contamination.

3/ Five or more representative samples should be analyzed for the amount of active ingredient and each impurity present for which a certified limit is required.

4/ The temperature at which the determination is made must be submitted.

5/ The solubility must be determined at 20 or 25° in distilled water and in representative polar and non-polar solvents.

6/ Information must be provided as to sensitivity to sunlight, metals and metal ions as well as temperature and pH.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[2]/
§158.125 Residue Chemistry				
171-2 - Chemical Identity	TGAI	Partially	00056362 00106207 00093409	Yes 6 Months
171-3 - Directions for Use	--	Yes		No
171-4 - Nature of Residue (Metabolism)				
- Plants	PAIRA	Partially	00024737 00045278 00036112 00045279 00036219 00045280 00036220 00106168 00045257 00106189 00045258 00106199 00045260 00106189 00045275 GS0181-003	Yes 24 Months[4]/[5]/
- Livestock	PAIRA and Plant Metabolites	Partially	00036105 00045263 00036106 00045262 00036107 00106164	Yes 18 Months[6]/[7]/
171-4 - Residue Analytical Method - Plant residues	TGAI and Metabolites	Yes	00015412 00087926 00015414 00106163 00029800 00106164 00036427 00106165 00032428 00106168 00032429 00106169 00036216 00106173 00036432 00106179 00036433 00106180	No[8]/

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[2]/
§158.125 Residue Chemistry - Continued				
			00036776 00106182 00036782 00106183 00039530 00106185 00045256 00106193 00054354 00106199 00054369 00106203 00069067 00106205 00087925 00106211 GS0181-006 GS0181-007	
- Animal residues	TGAI and Metabolites	Yes	00036431 GS0181-004 00045282 GS0181-005	No
171-4 - Storage Stability	PAI	Yes	00036441 00054358 00036777 00054360 00036778 00054363 00054355 00054366 00054356 GS0181-002	No
171-4 - Magnitude of the Residue-Residue Studies for each food use				
- Root and Tuber Vegetables Group[9]/				
- Potatoes	TEP	Yes	00039525 00078436 00106199 00078438 00106203 00105212 00026411 00106191 00039531 00106797	No

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[2]
§158.125 Residue Chemistry - Continued				
- Potato Chips	EP	Yes	00036110 00026612	No
- Processed potato waste	EP	Yes	00036110 00036112	No
- Legume Vegetables Group[10]				
- Lentils	TEP	Yes	00106179	No
- Peas (dried and succulent)	TEP	Partially	00106179	Yes 24 Months[11]
- Soybeans	TEP	Partially	00015773 00101537 00024503 00106215 00064797 GS0181-003	Yes 24 Months[12]
Foliage of Legume Vegetables Group[13]				
Lentil forage and hay	TEP	Yes[14]	00106179	No
Peas vines and straw	TEP	Yes[15]	00106179	No
Soybean forage, hay and straw	TEP	Partially[16]	00015773 00087925 00015949 00101537 00067433 00106183 00086681 00106215	Yes 24 Months
Fruiting Vegetables (Except Cucurbits) Group[17]				
Tomatoes	TEP	Yes	00106180 00106212	No

TABLE A
GENERIC DATA REQUIREMENTS FOR CHEMICAL: METRIBUZIN

Data Requirements	Composition[1]/	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[2]/
§158.125 Residue Chemistry - Continued				
Tomato products (catsup puree)	EP	Yes	00106180 06106212	No[3]/[18]/
Cereal Grains Group[19]/				
Barley	TEP	Yes	00036428 00106185 00036444 00106182 00087926	No
Barley milling fractions	EP	Partially	00036428 00106185 00036444 00106182 00087926	No[20]/
Corn grain (including popcorn and fresh)	TEP	Partially	00036429 00078942 00036443 00078943 00106173	Yes[21]/ 24 Months
Fresh corn canning waste	EP	Yes	00036429 00078942 00036443 00078943 00106173	No[3]/[22]/
Wheat	TEP	Yes	00036426 00087926 00036435 00106173 00036439 00106182 00036445 00106184 00067425 00106185	No
Wheat milled fractions	EP	Partially	00036426 00087926 00036435 00106173 00036439 00106182 00036445 00106184 00067425 00106185	Yes[23]/ 24 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[2]/
§158.125 Residue Chemistry - Continued				
Forage, Fodder, Hay and Straw of Cereal Grains Group[24]/				
Barley forage, hay and straw	TEP	Partially	00036434 00087926 00036440 00106185 00045255 00106182	No[3]/[25]/
Corn forage, silage and fodder	TEP	Partially	00036429 00036443 00078942 00078943 00106173	Yes 24 Months[26]/
Wheat forage, hay and straw	TEP	Partially	00036426 00087926 00036435 00106173 00036439 00106182 00036445 00106185 00067425	Yes 24 Months[27]/
Grass Forage, Fodder and Hay Group[28]/				
Grass forage and hay	TEP	Yes	00036438 00036770 00036780	No
Non-grass Animal Feed Group[29]/				
Alfalfa forage, hay and seed	TEP	Partially	00036437 00106182 00036769 00106185 00036779	Yes 24 Months[3]/[30]
Sainfoin forage and hay	TEP	Yes	00036436 00036781	No

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[2]
§158.125 Residue Chemistry - Continued				
Miscellaneous Commodities				
Asparagus	TEP	Yes	00037841 00106173 00106211	No[3][31]
- Sugarcane	TEP	Yes	00106168 00106190 00106202	No
Sugarcane forage	TEP	No	—	Yes 24 Months[32]
Sugarcane bagasse, molasses, refined sugar	EP	Partially	00106168 00106190 00106202	Yes 24 Months[3][33]
171-4 Magnitude of the Residues in Meat, Milk, Poultry and Eggs				
Milk	TGAI or Plant Metabolites	Partially	00036772 00106199	Reserved[34]
Meat, fat and meat byproducts of cattle, goats, hogs, horses and sheep	TGAI or Plant Metabolites	Partially	00045283	Reserved[34]
Poultry and Eggs	TGAI or Plant Metabolites	Partially	00045284 00045286	Reserved[34]

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

§158.125 Residue Chemistry - Continued

1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabeled; TEP = Typical end-use product; EP = End-use product.

2/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.
- 6 Month Due Date is December 31, 1985.
- 18 Month Due Date is December 31, 1986.
- 24 Month Due Date is June 30, 1987.

3/ Includes filing fee (establishing or changing a tolerance(s) requires a fee).

4/ Data reflecting the distribution and metabolism of ring-labeled $[^{14}C]$ metribuzin in mature soybeans (foliage and beans) following preemergent soil application at 0.5 lb ai/A. Analysis should include hydrolysis and reextraction of plant residues and aqueous fractions to determine conjugated ^{14}C residues of metribuzin.

5/ Data reflecting the distribution and metabolism of ring-labeled $[^{14}C]$ metribuzin in mature wheat (foliage and grain) following postemergence broadcast application at 0.75 lb ai/A. Analysis should include hydrolysis and reextraction of plant residues and aqueous fractions to determine conjugated ^{14}C-residues of metribuzin.

6/ Metabolism studies are required utilizing ruminants. Animals must be dosed for 3 days with ring-labeled $[^{14}C]$ metribuzin at a level sufficient to make residue identification possible. Milk must be collected twice daily during the dosing period. Animals must be sacrificed within 24 hours of the final dose. This distribution and characterization of residues (free and conjugated) must be determined in milk, liver, kidney, muscle and fat.

7/ Metabolism studies are required utilizing poultry. Hens must be dosed with ring labeled $[^{14}C]$ metribuzin for 3 days at a level sufficient to permit residue identification. Eggs must be collected twice daily during the dosing period. Animals must be sacrificed within 24 hours of the final dose and residues characterized in eggs, muscle, liver, kidney and fat.

8/ The conclusions stated here are tentative. Should the data requested in the "Nature of Residues in Plants" and "Nature of Residue in Animals" indicate additional metabolites of toxicological concern or that the methods do not adequately determine all conjugated residues of concern then submission of additional validated methods for data collection and tolerance enforcement will be required.

9/ A crop group tolerance is not appropriate at this time for the following reason: Residue data are required for two additional members of this group (radish and sugar beet), currently a tolerance exists for residues in or on potatoes only. The available data in support of a proposed tolerance for metribuzin residues in or on carrots are currently under review.

10/ A crop group tolerance is not appropriate at the present time for the following reasons:
a. Additional data are needed to support the established tolerances for residues in or on soybeans and dried peas.
b. Residue data are needed for one additional member of this crop group (succulent beans); presently, metribuzin is registered for use on lentils, peas, and soybeans.

§158.125 Residue Chemistry - Continued

11/ Data is required deplicting combined residues of metribuzin, DADK, DA, and DK in or on dried pea seed 50 days after postemergence application of the 50% WP formulation at 0.38 lbs ai/A. Test must be conducted in the Northwest.

12/ Data reflecting residues in or on soybeans harvested at normal maturity following two postemergence applications made at 7-day intervals of the 75% WP or 4 lb/gallon FLC formulation at 0.5 lbs ai/A application which were preceded by a preemergence application at 1 lb ai/A and a preplant application at 0.75 lb ai/A. Tests must be conducted in the MS delta region.

13/ A crop group tolerance is not appropriate at this time for the following reasons:
   a. Additional data are required to support the established tolerances for residues in soybean forage and hay.
   b. Pregrazing intervals must be proposed for lentil forage and pea vines.
   c. The established tolerances for residues in or on pea and lentil forage (0.5 ppm) and in or on soybean forage (4 ppm) differ by more than a factor of five. Also, the established tolerances for residues in or on pea and lentil vine hay (0.05 ppm) and soybean hay (4 ppm) differ by more than a factor of five.

14/ The data to support the tolerances for lentil hay are adequate. The data to support tolerances for lentil forage will be adequate provided a pregrazing interval of 40 days is proposed for lentil forage.

15/ The data to support the tolerances for lentil hay and forage are translatable to support the tolerances for pea vines and straw. The data is adequate to support these tolerances provided a pregrazing interval of 40 days is proposed.

16/ Data reflecting combined residues of metribuzin, DADK, DA, and DK in or on soybean forage and hay harvested 40 days after the last of two postemergence applications of a WP or 4 lb/gal FLC formulation at 0.5 lb ai/A preceded by a preemergence application at 1 lb ai/A and a preplant application at 0.75 lb ai/A. Tests must be conducted in the MS delta region.

17/ A crop group tolerance is not appropriate at this time for the following reasons: Residue data are required for one additional member of this group (peppers); currently, a tolerance exists for residues in or on tomatoes only.

18/ A food additive tolerance of 0.2 part per million must be proposed for the combined residues of metribuzin and its triazinone metabolites in concentrated tomato products.

19/ A crop group tolerance is not appropriate at this time for the following reasons:
   a. Residue data are required for two additional members of this group (rice and sorghum); metribuzin formulations are currently registered for use only on barley, corn and wheat.
   b. The established tolerances for metribuzin residues in or on fresh corn (including kernels plus cobs with husks removed) and corn grain (including popcorn) for 0.05 ppm and the established tolerances (0.75 ppm) for residues in or on barley and wheat grain differ by more than a factor of five.
   c. Additional residue data are required to support the currently established tolerance for residues in or on field corn grain.

TABLE A
GENERIC DATA REQUIREMENTS FOR CHEMICAL: METRIBUZIN

§158.125 Residue Chemistry - Continued

20/ Additional data are not required for this topic because similar data requirements exist for wheat milled products which, upon their receipt, will be translated to barley milled products.

21/ The following data are required to support the tolerance on corn grain:

a. Residue data for field corn grain harvested at normal maturity (~70-89% dry matter) after a single preemergence application with the 50% WP or the 4 lb/gal FLC formulation at 0.5 lb ai/A. Tests should be conducted in IA, MN, and NE as these states represent the major US corn production areas in which use of metribuzin on field corn is permitted.

b. Field corn grain bearing detectable weathered residues of metribuzin must be processed into oil (crude and refined) and milled products; residues of metribuzin *per se*, DA, DK and DADK in these products must be sought. Exaggerated rates may be necessary to obtain detectable residues in or on grain. If residues concentrate in any of these products, appropriate food additive tolerances must be proposed.

22/ A feed additive tolerance of 0.1 ppm must be proposed for metribuzin residues for fresh corn cannery waste.

23/ Wheat grain bearing detectable weathered residues of metribuzin must be processed into germ and milled products and combined residues of metribuzin *per se*, DA, DK and DADK in these items must be determined. Exaggerated rates may be necessary to obtain residues in or on grain.

24/ A crop group tolerance is not appropriate at the present time for the following reasons:

a. Additional residue data are required to support the currently established tolerance for residues in or on corn fodder.

b. The established tolerances for metribuzin residues in or on corn forage (0.1 ppm) and wheat forage (2 ppm) differ by a factor >5X.

c. Data and tolerance proposals must be submitted for residues in or on barley forage and hay, corn silage, and wheat hay; in the case of barley, grazing and feeding restrictions may be proposed in lieu of additional data.

25/ The available data are adequate to support tolerances on barley straw. Tolerances of 2 ppm for residues of metribuzin must be proposed for barley forage and straw. Alternatively, the present restriction against feeding or grazing barley prior to maturity may be amended to prohibit grazing or feeding treated barley, in any stage of maturity, to livestock. If tolerances are sought no additional data are required because data on wheat forage and data requested for wheat hay will be translated to barley forage and hay.

26/ Data are adequate to support the corn forage tolerance but not the corn fodder data. Data should be submitted and a tolerance proposed for corn silage. The following data are required:

a. Data concerning residues in or on corn fodder harvested at normal maturity following a single preemergence broadcast application with either the 50 WP or 4 lbs/gal FLC formulation at 0.25 lb ai/A. Tests must be conducted in representative states in which treatment of field corn is permitted.

b. Residue data for corn silage harvested from fields treated with a single preemergence broadcast application with the 50% WP or 4 lb/gal FLC at 0.25 lbs ai/A. Tests must be conducted in representative states in which treatment of field corn is permitted.

TABLE A
GENERIC DATA REQUIREMENTS FOR CHEMICAL: METRIBUZIN

§158.125 Residue Chemistry - Continued

27/ The following additional data are required: Data reflecting residues in or on wheat hay harvested at normal maturity after a postemergence broadcast application, after wheat has fully tillered, with the 50% or 75% WP, or the 4 lb/gal FIC formulation at 0.5 or 0.75 lbs ai/A. Both aerial and ground application equipment must be represented. High rate (0.75 lb ai/A) tests must be conducted in OK and low rate (0.5 ai/A) tests must be conducted in ID and UT, east of the Cascades.

28/ A crop group tolerance is not appropriate at this time for the following reasons:

a. Data are required for representative members of the crop group (Bermuda grass, bluegrass, and brumegrass or fescue)

b. A use has not been registered for applications to grass. The currently established tolerances for combined residues of metribuzin in or on grass forage and hay are for residues incurred in mixed stands with alfalfa for which use are registered.

29/ A crop group tolerance is not appropriate at this time for the following reasons:

a. Residue data are required for one additional member of this group (clover). Presently, metribuzin is registered for use on two members of this crop group (alfalfa and sainfoin).

b. Data and a tolerance proposal for residues in or on alfalfa seed are required.

30/ The available data are adequate to support tolerances on alfalfa forage and hay. A tolerance is necessary for residues in or on alfalfa seed. The following data are required: Residue data from mature alfalfa seed harvested 28 days after the record of two applications at 1 lb ai/A using the 4 lb/gal FIC or a W.P. These applications should represent fall and spring dormant applications no more than 5-6 months apart; a smaller treatment to major U.S. alfalfa growing regions. An appropriate tolerance must be proposed.

31/ A tolerance of 0.1 ppm on asparagus must be proposed for the combined residues of metribuzin and its triazinone metabolites.

32/ The following additional data are required. Residues must be determined in or on the sugarcane forage grown at HI at intervals following a spot treatment of the 50%, 70%, or 75% WP or the 4 lb/gal FIC at 5 lb ai/A which was preceded by a postemergence treatment at 3 lb/A; a pregrazing interval and tolerance for residues must be proposed; alternatively, a grazing restriction may be proposed.

33/ The following additional data are required: Residues must be determined in molasses, refined sugar, and bagasse processed from sugarcane bearing measurable weathered residues of metribuzin, DA, DK and DADK. If residues are found to concentrate in refined sugar, an appropriate food additive tolerance must be processed. The established food/feed tolerance must be proposed. The established food/feed additive tolerance for residues in molasses and bagasse will be assessed on receipt of the above-requested data.

34/ The nature of the residue in ruminants (including milk, meat, eggs) is not adequately understood. The adequacy of these tolerances and of the data submitted in support of the established tolerances cannot be assessed at this time. On a receipt of data requested in "Nature of Residue of Animals," the adequacy of the available data and the established tolerance will be assessed.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]/
§158.130 Environmental Fate					
DEGRADATION STUDIES-LAB:					
161-1 - Hydrolysis	TGAI or PAIRA	A,B	No		Yes[3A]/ 9 Months
Photodegradation					
161-2 - In Water	TGAI or PAIRA	A,B	No		Yes 9 Months
161-3 - On soil	TGAI or PAIRA	A	Partially	00045259	Yes[3A]/[4]/ 9 Months
161-4 - In Air	TGAI or PAIRA	A	No		No[3A]/
METABOLISM STUDIES-LAB:					
162-1 - Aerobic Soil	TGAI or PAIRA	A,B	No		Yes[3A]/ 27 Months
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No		Yes[3A]/ 27 Months
162-3 - Anaerobic Aquatic	TGAI or PAIRA	___	No		No[6]/
162-4 - Aerobic Aquatic	TGAI or PAIRA	___	No		No[7]/
MOBILITY STUDIES:					
163-1 - Leaching and Adsorption/Desorption	TGAI or PAIRA	A,B	Partially	00025729 00054368 00029887 00045268	Yes[3A,8]/ 12 Month
163-2 - Volatility (Lab)	TEP	A	No		No[9]/
163-3 - Volatility (Field)	TEP	A	No		No[10]/

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]/
§158.130 Environmental Fate - Continued					
DISSIPATION STUDIES-FIELD:					
164-1 - Soil	TEP	A, B	No		Yes[3A]/ 27 Months
164-2 - Aquatic (Sediment)	TEP		No		No[11]/
164-3 - Forestry	TEP		No		No[12]/
164-4 - Combination and Tank Mixes			No		No[13]/
164-5 - Soil, Long-term	TEP	A	No		No[14]/
ACCUMULATION STUDIES:					
165-1 - Rotational Crops (Confined)	PAIRA	A	No		Yes[15A]/ 39 Months
165-2 - Rotational Crops (Field)	TEP	A	No		Yes[15]/ 50 Months
165-3 - Irrigated Crops	TEP	—	No		No[16]/
165-4 - In Fish	TGAI or PAIRA	A, B	No		Yes 12 Months
165-5 - In Aquatic Nontarget Organisms	TEP	–––	No		No[17]/
MONITORING STUDIES:					
Ground water Monitoring Studies			No		Yes[18]/

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

§158.130 Environmental Fate - Continued

1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabeled; TEP = Typical end-use product.

2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-food; C = Aquatic, Food Crop; D = Aquatic, Non-food; E = Greenhouse, Food Crop; F = Greenhouse, Non-food; G = Forestry; H = Domestic Outdoor; I = Indoor.

3/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.
- ° 9 Month Due Date is March 31, 1986 .
- ° 12 Month Due Date is June 30, 1986 .
- ° 27 Month Due Date is September 30, 1987 .
- ° 39 Month Due Date is September 30, 1988 .
- ° 50 Month Due Date is February 28, 1989 .

3A/ Data in response to the Data Call-In for groundwater including hydrolysis, photodagration in water and on soil, aerobic and anaerobic soil metabolism, mobility, and field dissipation have been received and screened. Any valid studies which meet guidelines will reduce the data gaps.

4/ This study will be acceptable if additional data are provided on the factors affecting the incident sunlight as well as its intensity and duration.

5/ This compound does not require data on photodegradation in air.

6/ Data are not required because metribuzin has no forestry, or aquatic use.

7/ Data are not required because metribuzin has no aquatic use.

8/ Additional data are needed on the leaching or adsorption/desorption of the soil degradation products of metribuzin.

9/ The compound does not require volatility (lab) data.

10/ The compound does not require volatility (field) data.

11/ Data are not required because metribuzin has no aquatic uses.

12/ Data are not required because metribuzin has no forestry uses.

13/ Data requirements for combination products and tank mixes are not addressed in this Standard.

14/ Data are not required since results of the valid terrestrial field dissipation data indicated that greater than 50% of the residues dissipate prior to recommended subsequent application.

15/ For crops rotated on treated areas, any one of the following would apply:
- a. A tolerance must be obtained for the rotated crop.
- b. The product label must include a restriction against the rotation of crops used for feed or food which are not registered for use with metribuzin.
- c. Data must be provided to determine time intervals at which rotated crops planted in treated areas will be free of pesticide residues.

15A/ Conditional on results from confined studies.

16/ No data are required because metribuzin does not have an aquatic food crop or aquatic noncrop use is not used in and around holding ponds used for irrigation purposes, and has no use involving effluents or discharges to water used for crop irrigation.

17/ No data are required because metribuzin has no forestry aquatic noncrop, or aquatic impact use.

18/ Ground water monitoring studies will be required. Notification of types of studies required and sites to be tested (Agency is in process of determining types of studies and test sites), by means of an amendment to the standard 3 months of issuance of the standard. A time limit for submission of data will be set at that time.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]	Use[2] Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]
§158.130 Toxicology					
ACUTE TESTING:					
81-1 - Acute Oral Toxicity - Rat	TGAI	A,B	Yes	00106158	No
81-2 - Acute Dermal Toxicity - Rabbit	TGAI	A,B	Yes	00106149	No
81-3 - Acute Inhalation Toxicity - Rat	TGAI	A,B	No	----------	Yes[4] 9 Months
81-7 - Delayed Neurotoxicity - Hen	TGAI	--	No	----------	No[5]
SUBCHRONIC TESTING:					
82-1 - 90-Day Feeding: - Rodent, and	TGAI	A,B	No	----------	No[6]
- Non-rodent (Dog)		A,B	No	----------	No[7]
82-2 - 21-Day Dermal - Rabbit	TGAI	A,B	No	----------	No[8]
82-3 - 90-Day Dermal - Rabbit	TGAI	A,B	No	----------	No[8]
82-4 - 90-Day Inhalation: - Rat	TGAI	A,B	No	----------	No[8]
82-5 - 90-Day Neurotoxicity: - Hen	TGAI	A,B	No	----------	No[8]
- Mammal		A,B	No	----------	No[8]

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]/
§158.130 Toxicology - Continued					
CHRONIC TESTING:					
83-1 - Chronic Toxicity - 2 species:	TGAI				
- Rodent, and		A,B	No	________	Yes[9]/ 49 Months
- Non-rodent (Dog)		A,B	Yes	00061260	No
83-2 - Oncogenicity - 2 species:	TGAI				
- Rat (preferred), and		A,B	No	________	Yes[9]/ 50 Months
- Mouse (preferred)		A,B	Yes	00061256 00079527 00087795	No
83-3 - Teratogenicity - 2 species:	TGAI				
- Rat		A,B	No	________	Yes[10]/ 15 Months
- Rabbit		A,B	Yes	00087796	No
83-4 - Reproduction - Rat 2-generation	TGAI	A,B	No	________	Yes[11]/ 39 Months
MUTAGENICITY TESTING:					
84-1 - Gene Mutation (Ames Test)	TGAI	A,B	Partially	00086770	Yes[12]/ 9 Months
84-2 - Structural Chromosomal Aberration	TGAI	A,B	Partially	00086766 00086767 00086765 00086768	Yes[12]/ 12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]/
§158.130 Toxicology - Continued					
84-3 - Other Genotoxic Effects	TGAI	A,B	No		Yes[12]/ 12 Months
SPECIAL TESTING:					
85-1 - General Metabolism	PAI or PAIRA	A,B	No		Yes[13]/ 24 Months
85-2 - Dermal Penetration	Choice		No		Yes 12 months
86-1 - Domestic Animal Safety	Choice		No		No[8]/

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

§158.130 Toxicology - Continued

1/ Composition: PAI = Pure active ingredient; PAIRA = Pure active ingredient, radiolabeled; Choice = Choice of several test substances determined on a case-by-case basis; TGAI - Technical grade of active ingredient.

2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-food; C = Aquatic, Food Crop; D = Aquatic, Non-food; E = Greenhouse, Food Crop; F = Greenhouse, Non-food; G = Forestry, H = Domestic Outdoor; I = Indoor.

3/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.

- ° 9 Month Due Date is March 31, 1986.
- ° 12 Month Due Date is June 30, 1986.
- ° 15 Month Due Date is September 30, 1986.
- ° 24 Month Due Date is June 30, 1987.
- ° 39 Month Due Date is September 30, 1988.
- ° 50 Month Due Date is August 31, 1989.

4/ Additional data are required because the study reviewed was classified as supplementary data.

5/ Since metribuzin is not a cholinesterase inhibitor and does not otherwise indicate neurotoxicity, these data are not required.

6/ An acceptable chronic rat feeding study will fulfill the requirement for a subchronic rat study.

7/ The chronic dog study satisfies the requirement for a subchronic dog study.

8/ The guidelines and uses generally indicate that these data are not required.

9/ The submitted study is classified supplementary data. If additional data can be submitted, this study may be upgraded. If not, a repeat study will be necessary.

10/ A teratogenicity study in rats is required because the study previously submitted was reviewed by the Agency and found to be supplementary.

11/ Additional data are required because the high dose of the study previously submitted did not induce any toxicity, therefore, the study is classified as supplementary data.

12/ The following mutagenicity data are required.

a. Microbial point mutation tests.
b. Mammalian point mutation tests *in vitro*.
c. *In vivo* cytogenetics tests in mammals with either heritable translocation or dominant lethal studies.
d. Tests for primary DNA damage such as sister chromatid exchange or unscheduled DNA synthesis assays.

13/ Additional data are needed because previously submitted data were reviewed as supplementary data.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission
§158.140 Reentry Protection					
132-1 - Foliar Dissipation	TEP	___	No	___	No[3]/
132-1 - Soil Dissipation	TEP	___	No	___	No[3]/
133-3 - Dermal Exposure	TEP	___	No	___	No[3]/
133-4 - Inhalation Exposure	TEP	___	No	___	No[3]/
§158.142 Spray Drift					
201-1 - Droplet Size Spectrum	TEP	___	No	___	No[3]/
201-1 - Drift Field Evaluation	TEP	___	No	___	No[3]/

1/ Composition: TEP = Typical end-use product.

2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-food; C = Aquatic, Food Crop; D = Aquatic, Non-food; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food; G = Forestry; H = Domestic Outdoor; I = Indoor.

3/ Because of its low toxicity category (III), metribuzin does not required reentry data.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]/
§158.145 Wildlife and Aquatic Organisms					
AVIAN AND MAMMALIAN TESTING:					
71-1 - Acute Avian Oral Toxicity	TGAI	A,B	Yes	GS0181-009	No
	TEP	A,B	Partially	00051482	No [4]/
71-2 - Avian Subacute Dietary Toxicity	TGAI				
- Upland Game Bird, and		A,B	Yes	00065507	No
- Waterfowl		A,B	Partially	00065507	Yes[5]/ 9 Months
71-3 - Wild Mammal Toxicity	TGAI	A,B	No	----	No[6]/
71-4 - Avian Reproduction	TGAI				
- Upland Game Bird, and		A,B	No	----	Reserved[7]/
- Waterfowl		A,B	No	----	Reserved[7]/
71-5 - Simulated Field Testing	TEP				
- Mammals and		A,B	Partially	00015931	No
- Birds		A,B	Partially	00015931	No
- Actual Field Testing	TEP				
- Mammals, and		A,B	Partially	00015931	No
- Birds		A,B	Partially	00015931	No

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]/
§158.145 Wildlife and Aquatic Organisms - Continued					
AQUATIC ORGANISM TESTING:					
72-1 - Freshwater Fish Toxicity	TGAI				
- Coldwater Fish Species, and		A,B	Yes	GS0181-008	No
- Warmwater Fish Species		A,B	Yes	GS0181-008	No
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI	A,B	Yes	00134495	No
72-3 - Acute Toxicity to Estuarine and Marine Organisms	TGAI				
- Fish		A	No		Yes[8]/ 12 Months
- Mollusk		A	Partially	00106197	Yes[8]/ 12 Months
- Shrimp		A	Yes	00106197	No
72-4 - Fish Early-Life Stage, and	TGAI	A,B	No	----	Reserved[9]/
- Aquatic Invertebrate Life-Cycle		A,B	No	----	Reserved[9]/

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[3]/
§158.145 Wildlife and Aquatic Organisms - Continued					
72-5 - Fish - Life-Cycle	TGAI	A,B	No	----	No
72-6 - Aquatic Organism Accumulation	TGAI, PAI or Degradation Product				
- Crustacean		A,B	No	----	Reserved[9]/
- Fish		A,B	No	----	Reserved[9]/
- Insect Nymph		A,B	No	----	Reserved[9]/
- Mollusk		A,B	No	----	Reserved[9]/
72-7 - Simulated Field Testing - Aquatic Organisms	TEP	A,B	No	----	Reserved[9]/
- Actual Field Testing - Aquatic Organisms		A,B	No	----	Reserved[9]/

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

§158.145 Wildlife and Aquatic Organisms - Continued

1/ Composition: TGAI = Technical grade of the active ingredient; PAI = Pure active ingredient, TEP = Typical end-use product.

2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-food Crop; C = Aquatic, Food Crop; D = Aquatic, Non-food; E = Greenhouse, Food Crop; F = Greenhouse, Non-food; G = Forestry, H = Domestic Outdoor; I = Indoor.

3/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.
° 9 Month Due Date is March 31, 1986.
° 12 Month Due Date is June 30, 1986.

4/ There are currently no requirements for this type of study.

5/ Additional data are required for upland avian species.

6/ The low avian and mammalian toxicity for metribuzin indicate that these data are not required.

7/ Requirements are reserved pending dietary data on an upland species and appropriate environmental fate information.

8/ Data are needed on an estuarine/marine fish species and an oyster species to support sugarcane and soybean registration.

9/ Appropriate environmental fate information is needed to determine if potentially hazardous concentrations will reach the aquatic environment when products are used as directed.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition 1/	Use Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission
§158.150 Plant Protection					
121-1 - TARGET AREA PHYTOTOXICITY	EP		No	—	No 2/
NONTARGET AREA PHYTOTOXICITY					
TIER I					
122-1 - Seed Germination/ Seedling Emergence	TGAI		No	—	No 2/
122-1 - Vegetative Vigor	TGAI		No	—	No 2/
122-2 - Aquatic Plant Growth	TGAI		No	—	No 2/
TIER II					
123-1 - Seed Germination/ Seedling Emergence	TGAI		No	—	No 2/
123-1 - Vegetative Vigor	TGAI		No	—	No 2/
123-2 - Aquatic Plant Growth	TGAI		No	—	No 2/
TIER III					
124-1 - Terrestrial Field	TEP		No	—	No 2/
124-2 - Aquatic Field	TEP		No	—	No 2/

1/ Composition: TGAI = Technical grade of the active ingredient; TEP = Typical end-use product. EP = End-use product.

2/ These requirements are generally waived unless it is believed there is a phototoxicity problem.

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]/	Use[2]/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission
§158.155 Nontarget Insect					
NONTARGET INSECT TESTING - POLLINATORS:					
141-1 - Honeybee acute contact toxicity	TGAI	A	Yes	00028772	No
141-2 - Honeybee - toxicity of residues on foliage	TEP	A	No		No[4]/
141-4 - Honeybee subacute feeding study	(Reserved)[3]/				
141-5 - Field testing for pollinators	TEP	A	No		No[4]/

TABLE A
GENERIC DATA REQUIREMENTS FOR METRIBUZIN

Data Requirements	Composition[1]	Use[2] Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission
§158.155 Nontarget Insect - Continued					
NONTARGET INSECT TESTING - AQUATIC INSECTS:					
142-1 - Acute toxicity to aquatic insects	(Reserved)[5]				
142-1 - Aquatic insect life-cycle study	(Reserved)[5]				
142-3 - Simulated or actual field testing for aquatic insects	(Reserved)[5]				
143-1 - NONTARGET INSECT TESTING - PREDATORS AND PARASITES thru 143-3	(Reserved)[5]				

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[1] Composition: TGAI = Technical grade of the active ingredient; TEP = Typical end-use product.

[2] The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-food Crop; C = Aquatic, Food Crop; D = Aquatic, Non-food; E = Greenhouse, Food Crop; F = Greenhouse, Non-food, G = Forestry; H = Domestic Outdoor; I = Indoor.

[3] Reserved pending development of test method.

[4] Requirement applied on a case-by-case basis. Data reviewed to date do not indicate the need for a study.

[5] Reserved pending Agency decision as to whether data requirement should be established.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING METRIBUZIN (94% TECHNICAL)

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframes Listed Below[1]
§158.120 Product Chemistry						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	MP	R	☐	☒		
61-2 - Description of Beginning Materials and Manufacturing Process	MP	R	☒	☐	2,3	6 Months
			☒	☐	4	6 Months
61-3 - Discussion of Formation of Impurities	MP	R				
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	MP	CR	☒	☐	5	12 Months
62-2 - Certification of Limits	MP	R	☒	☐	6,7	12 Months
62-3 - Analytical Methods to Verify Certified Limit	MP	R	☒	☐	8	12 Months
Physical and Chemical Characteristics						
63-2 - Color	MP	R	☐	☒		
63-3 - Physical State	MP	R	☐	☒		
63-4 - Odor	MP	R	☒	☐		6 Months

: :

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING METRIBUZIN (94% TECHNICAL)

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	No	Footnote Number	Data Must Be Submitted Within Timeframes Listed Below1/
§158.120 Product Chemistry						
Physical and Chemical Characteristics (Continued)						
63-7 - Density, Bulk Density, or Specific Gravity	MP	R	[X]	[ ]	____________	6 Months
63-12 - pH	MP	CR	[X]	[ ]	____________	6 Months
63-14 - Oxidizing or Reducing Action	MP	CR	[X]	[ ]	____________	6 Months
63-15 - Flammability	MP	CR	[X]	[ ]	____________	6 Months
63-16 - Explodability	MP	R	[X]	[ ]	____________	6 Months
63-17 - Storage Stability	MP	R	[X]	[ ]	____________	15 Months
63-18 - Viscosity	MP	CR	[X]	[ ]	____________	6 Months
63-19 - Miscibility	MP	CR	[X]	[ ]	____________	6 Months
63-20 - Corrosion Characteristics	MP	R	[X]	[ ]	____________	15 Months
Other Requirements:						
64-1 - Submittal of samples	MP	CR	[ ]	[X]	____________	

MP = Manufacturing-use Product; R = Required; CR = Conditionally Required.

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.

- 6 Month Due Date is December 31, 1985.
- 12 Month Due Date is June 30, 1986.
- 15 Month Due Date is September 30, 1986.

2/ Details of the manufacturing process including the relative amounts of beginning materials, a description of the equipment used to produce the product, reaction conditions, the duration of each step in the process, purification procedures and quality control measures for the 94% technical must be submitted.

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING METRIBUZIN (94% TECHNICAL)

§158.120 Product Chemistry - Continued

3/ The name and address of the manufacturer, producer, or supplier of each beginning material used to manufacture the 94% technical and a copy of all available technical specifications, data sheets, and other documents by which the manufacturer, producer, or supplier of beginning materials describes its composition and properties.

4/ A discussion of each impurity believed to be present at >0.1% based on knowledge of the beginning maerials, all possible chemical reactions and any contamination.

5/ Five or more representative samples should be analyzed for the amount of active ingredient and each impurity present for which a certified limit is required.

6/ A current Confidential Statement of Formula must be submitted.

7/ The following additional data are required:

a. Upper and lower limits must be provided (and certified) for metribuzin in 94% technical.
b. Upper limits must be provided (and certified) for each impurity present at >0.1% in the 94% technical.
c. All nitrosamines must be identified and quantified in six samples in 94% technical product; two samples of each must be analyzed shortly after production, 3 months after production, and 6 months after production. A method sensitive to 1 ppm of N-Nitroso contaminants must be used. An upper limit must be provided (and certified) for all nitrosamines found to be present.

8/ Quantitative methods to determine all impurities for which a certified limit is required on 94% technical. Each method must be accompanied by the validation studies of precision and accuracy of the method.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACUTRING-USE PRODUCTS CONTAINING METRIBUZIN (94% TECHNICAL)

Data Requirements	Composition1/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission2/
§158.135 Toxicology				
ACUTE TESTING:				
81-1 - Acute Oral Toxicity - Rat	MP	Yes	00106158	No
81-2 - Acute Dermal Toxicity - Rabbit	MP	Yes	00106149	No
81-3 - Acute Inhalation Toxicity - Rat	MP	No		Yes3/ 9 Month
81-4 - Primary Eye Irritation - Rabbit	MP	Yes	GS0181-010	No
81-5 - Primary Dermal Irritation - Rabbit	MP	Yes	GS0181-010	No
81-6 - Dermal Sensitization - Guinea Pig	MP	Yes	00034014	No

1/ Composition: MP = Manufacturing-use product.

2/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.

° 9 Month Due Date is March 31, 1986 .

3/ Additional data are needed because the study was classified as supplementary data.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING METRIBUZIN (50% FI)

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required		Footnote Number	Data Must Be Submitted Within Timeframes Listed Below1/
			Yes	No		
§158.120 Product Chemistry						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	MP	R	☒	☐		6 Months
61-2 - Description of Beginning Materials and Manufacturing Process	MP	R	☒	☐	2,3	6 Months
61-3 - Discussion of Formation of Impurities	MP	R	☒	☐	4	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	MP	CR	☒	☐	5	12 Months
62-2 - Certification of Limits	MP	R	☒	☐	6,7	12 Months
62-3 - Analytical Methods to Verify Certified Limit	MP	R	☒	☐	8	12 Months
Physical and Chemical Characteristics						
63-2 - Color	MP	R	☒	☐		6 Months
63-3 - Physical State	MP	R	☒	☐		6 Months
63-4 - Odor	MP	R	☒	☐		6 Months

: :

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING METRIBUZIN (50% FI)

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframes Listed Below[1]
§158.120 Product Chemistry-(continued)						
Physical and Chemical Characteristics (Continued)						
63-7 - Density, Bulk Density, or Specific Gravity	MP	R	☒	☐	______________	6 Months
63-12 - pH	MP	CR	☒	☐	______________	6 Months
63-14 - Oxidizing or Reducing Action	MP	CR	☒	☐	______________	6 Months
63-15 - Flammability	MP	CR	☒	☐	______________	6 Months
63-16 - Explodability	MP	R	☒	☐	______________	6 Months
63-17 - Storage Stability	MP	R	☒	☐	______________	15 Months
63-18 - Viscosity	MP	CR	☒	☐	______________	6 Months
63-19 - Miscibility	MP	CR	☒	☐	______________	6 Months
63-20 - Corrosion Characteristics	MP	R	☒	☐	______________	15 Months
Other Requirements						
64-1 - Submittal of samples	MP	CR	☐	☒	______________	

: :

MP = Manufacturing-use Product; R = Required; CR = Conditionally Required:

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.

° 6 Month Due Date is December 31, 1985.
° 12 Month Due Date is June 30, 1986.
° 15 Month Due Date is September 30, 1986.

2/ Details of the manufacturing process including the relative amounts of beginning materials, a description of the equipment used to produce the product, reaction conditions, the duration of each process, purification procedures and quality control [illegible] must be submitted.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING METRIBUZIN (50% FI)

§158.120 Product Chemistry - Continued

3/ The name and address of the manufacturer, producer, or supplier of each beginning material used to manufacture the 50% FI and a copy of all available technical specifications, data sheets, and other documents by which the manufacturer, producer, or supplier of the beginning material describes its composition and properties.

4/ A discussion of each impurity believed to be present at >0.1% based on knowledge of the beginning materials, all possible chemical reactions and any contamination.

5/ Five or more representative samples should be analyzed for the amount of active ingredient and each impurity present for which a certified limit is required.

6/ A current Confidential Statement of Formula must be submitted.

7/ The following data are required:

a. Upper and lower limits must be provided (and certified) for metribuzin and each intentionally added inert in the 50% FI.

b. Upper limits must be provided (and certified) for each impurity present at >0.1% (w/w) in the 50% FI.

c. The purpose of each intentionally-added inert in 50% F.I. must be provided.

d. All nitrosamines must be identified and quantified in six samples in 50% F.I. products; two samples of each must be analyzed shortly after production, 3 months after production, and 6 months after production. A method sensitive to 1 ppm of N-Nitroso contaminants must be used. An upper limit must be provided (and certified) for all nitrosamines found to be present.

8/ Quantitative methods to determine all impurities for which a certified limit is required on 50% F.I. products. Each method must be accompanied by validation studies of the precision and accuracy of the method.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACUTRING-USE PRODUCTS CONTAINING METRIBUZIN (50% F.I.)

Data Requirements	Composition[1]/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframes For Data Submission[2]/
§158.135 Toxicology				
ACUTE TESTING:				
81-1 - Acute Oral Toxicity - Rat	MP	Yes	00106158	No
81-2 - Acute Dermal Toxicity - Rabbit	MP	Yes	00106149	No
81-3 - Acute Inhalation Toxicity - Rat	MP	No		Yes[3]/ 9 Months
81-4 - Primary Eye Irritation - Rabbit	MP	Yes	GS0181-010	No
81-5 - Primary Dermal Irritation - Rabbit	MP	Yes	GS0181-010	No
81-6 - Dermal Sensitization - Guinea Pig	MP	Yes	00034014	No

1/ Composition: MP = Manufacturing-use product.

2/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document.
° 9 Month Due Date is March 31, 1986.

3/ Additional data are needed because the study was classified as supplementary data.

IV. SUBMISSION OF REVISED LABELING

Note: This section applies to end use products only to the extent described in Section I (Regulatory Position and Rationale). Otherwise, the following information pertains exclusively to manufacturing use products.

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the results of data concerning the product and its ingredients. Labeling requirements are set out in 40 CFR 162.10 (see Appendix IV-1) and are summarized for products containing this active ingredient as part of this Guidance Document (See Appendix IV-2). Applications submitted in response to this notice must include draft labeling for Agency review.

If you fail to submit revised labeling information complying with this section (supplemented by requirements described in Section I, Regulatory Position and Rationale), EPA may issue a notice of intent to cancel the registration under FIFRA sec. 6(b)(1).

A. Label Contents

40 CFR 162.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to Appendix IV-2.

Item 1. PRODUCT NAME - The name, brand or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading.

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text.

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. See Appendix IV-1. [40 CFR 162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. See Appendix IV-1. [40 CFR 162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container. See Appendix IV-1. [40 CFR 162.10(f)]

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. See Appendix IV-1. [40 CFR 162.10(g)]

Item 6B. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - Front panel precautionary statements must be grouped together, preferably within a block outline. The table below shows the minimum type size requirements for various size labels.

Size of Label on Front Panel in Square Inches	Signal Word Minimum Type Size All Capitals	"Keep Out of Reach of Children" Minimum Type Size
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement "Keep Out of Reach of Children" must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely. See Appendix IV-1. [40 CFR 162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. See Appendix IV-1. [40 CFR 162.10 (h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. See Appendix IV-1. [40 CFR 162.10(h)(1)(i)]

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. See Appendix IV-1. [40 CFR 162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "See Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. See Appendix IV-1. [40 CFR 162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. See Appendix IV-1. [40 CFR 162.10 (h)(2)].

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. See Appendix IV-1. [40 CFR 162.10 (h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. See Appendix IV-1. [40 CFR 162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD

1. Flammability statement. Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in Appendix IV-3. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

2. Criteria for declaration of non-flammability. The following criteria will be used to determine if a product is non-flammable:

a. A "non-flammable gas" is a gas (or mixture of gases) that will not ignite when a lighted match is placed against the open cylinder valve.

b. A "non-flammable liquid" is one having a flashpoint greater than 350°F (177°C).

c. A "non-flammable aerosol" is one which meets the following criteria:

i. The flame extension is zero inches;

ii. There is no flashback; and

iii. The flashpoint of the non-volatile liquid component is greater than 350°F (177°C).

3. Declaration of non-flammability. Products which meet the criteria for non-flammability specified above may bear the notation "non-flammable" or "non-flammable (gas, liquid, etc.)" on the label. It may appear as a substatement to the ingredients statement, or on a back or side panel, but shall not be highlighted or emphasized (as with an inordinately large type size) in any way that may detract from precaution.

4. Other physical/chemical hazard statements. When chemistry data demonstrate hazards of a physical or chemical nature other than flammability, appropriate statements of hazard will be prescribed. Such statements may address hazards of explosivity, oxidizing or reducing capability, or mixing with other substances to produce toxic fumes.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) requires that all pesticide formulations/uses be classified for either general or restricted use. Products classified for restricted use may be limited to use by certified applicators or persons under their direct supervision (or may be subject to other restrictions that may be imposed by regulation).

In the Registration Standard, the Agency has (1) indicated certain formulations/uses are to be restricted (Section I indicates why the product has been classified for restricted use); or (2) reserved any classification decision until appropriate data are submitted.

The Regulatory Position and Rationale states whether products containing this active ingredient are classified for restricted use. If they are restricted the draft label(s) submitted to the Agency as part of your application must reflect this determination (see below).

If you do not believe that your product should be classified for restricted use, you must submit any information and rationale with your application for reregistration. During the Agency's review of your application, your proposed classification determination will be evaluated in accordance with the provisions of 40 CFR 162.11(c). You will be notified of the Agency's classification decision.

A. Classification Labeling Requirements

If Section I of this Guidance Document indicates that your product has been classified for restricted use, the following label requirements apply:

1. Front panel statement of restricted use classification.

a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 162.10(h)(1)(iv).

b. Directly below this statement on the front panel, a summary statement of the terms of restriction must appear (including the reasons for restriction if specified in Section I). If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification."

2. Some but not all uses restricted. If the Regulatory Position and Rationale states that some uses are classified for restricted use, and some are unclassified, several courses of action are available:

a. You may label the product for Restricted use. If you do so, you may include on the label uses that are unrestricted, but you may not distinguish them on the label as being unrestricted.

b. You may delete all restricted uses from your label and submit draft labeling bearing only unrestricted uses.

c. You may "split" your registration, i.e., register two separate products with identical formulations, one bearing only unrestricted uses, and the other bearing restricted uses. To do so, submit two applications for reregistration, each containing all forms and necessary labels. Both applications should be submitted simultaneously. Note that the products will be assigned separate registration numbers.

B. Compliance Schedules

No product with a use classified for restricted use under this Standard may be released for shipment by the registrant or producer after one year from the date of issuance of this Standard, unless such product bears the restricted use classification. All products still in channels of trade after two years from the date of issuance of this Standard must be labeled for restricted use.

Item 9B [There is no Item 9B].

Item 9C. MISUSE STATEMENT - All products must bear the misuse statement, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." This statement appears at the beginning of the directions for use, directly beneath the heading of that section.

Item 10A. REENTRY STATEMENT - If a reentry interval has been established by the Agency, it must be included on the label. Additional worker protection statements may be required in accordance with PR Notice 83-2, March 29, 1983.

Item 10B [There is no Item 10B].

Item 10C. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix IV-4 to determine the disposal instructions appropriate for your products.

Item 10D. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. See Appendix IV-1. [40 CFR 162.10]

B. Collateral Labeling

Bulletins, leaflets, circulars, brochures, data sheets, flyers, or other written or graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

V. INSTRUCTIONS FOR SUBMISSION

A. For Manufacturing Products (MP) containing (metribuzin) as an active ingredient.

1. Within 90 days from receipt of this document, you must **submit to the Product Manager in the Registration Division at** the address given at the end of this section the "FIFRA Section 3(c)(2)(B) Summary Sheet" EPA Form 8580-1. Refer to Appendix II-3 with appropriate attachments.

If on the Summary Sheet, you commit to develop the data, request a minor chemical exemption, present arguments that a data requirement is not applicable, or submit protocols or modified protocols for Agency review, you must also submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This information should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted.)

2. Within 6 months from receipt of this document you must submit to the Product Manager on the Registration Division:

a. Confidential Statement of Formula, EPA Form 8570-4.

b. Product Specific Data Report, EPA Form 8580-4 (Appendix III-1).

c. Two copies of any required product-specific data.

d. Two copies of draft labeling, including the label and associated brochures. If current labeling conforms to the requirements of this guidance document and the results of the short-term data, you may submit such labeling. End use product labeling must comply specifically with the instructions in Section I (Regulatory Position and Rationale) of this guidance document. The labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 inch files. The draft label must indicate the intended colors of the final label, clear indication of the front panel label, and the intended type sizes of the text.

e. Evidence of compliance with data support requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99 (enclosed) for latest requirements.

3. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the agreed schedule cannot be met, notify the Product Manager and the Office of Compliance Monitoring.

B. For Manufacturing Use Products containing (metribuzin) in combination with other active ingredients

1. Within 90 days from receipt of this document, you must submit the "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1. Refer to Appendix II-3 with appropriate attachments.

If on the Summary Sheet, you commit to develop the data, request a minor chemical exemption, present arguments that a data requirement is not applicable, or submit protocols or modified protocols for Agency review, you must also submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This information should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted.)

2. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the agreed schedule cannot be met, notify the Product Manager and the Office of Compliance Monitoring.

C. For End Use Products containing (metribuzin))alone or in combination with other active ingredients:

1. Within 90 days from receipt of this document, you must submit the "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1. Refer to Appendix II-3 with appropriate attachments.

If on the Summary Sheet, you commit to develop the data, request a minor chemical exemption, present arguments that a data requirement is not applicable, or submit protocols or modified protocols for Agency review, you must also submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This information should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted.)

2. Within 6 months from receipt of this document you must submit:

a. Confidential Statement of Formula, EPA Form 8570-4.

b. Product-Specific Data Report, EPA Form 8580-4 (Appendix III-1).

c. Two copies of any required product-specific data. (Refer to Table C).

d. Two copies of draft labeling, including the label and associated brochures. If current labeling conforms to the requirements of this guidance document and the results of the short-term data, you may submit such labeling. End use product labeling must comply specifically with the instructions in Section I (Regulatory Position and Rationale) of this guidance document. Labeling should be either typewritten text on 8 1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8 1/2 inch files. The draft label must indicate the intended colors of the final label, clear indication of the front panel label, and the intended type sizes of the text.

e. Evidence of compliance with data support requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99 (enclosed) for latest requirements.

3. Within the time frames set forth in Table A, submit all generic data, unless you are eligible for the formulator's exemption.

D. For intrastate products containing (Metribuzin) either as the sole active ingredient or in combination with other active ingredients

These products are being called in for full Federal registration. Producers of these products are being sent a letter instructing them how to submit an application for registration.

E. Applications and other required information should be submitted to the following address:

Robert Taylor, Product Manager
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., S.W.
Washington, D.C. 20460
Phone No. (703) 557-1800

The address for submission to the Office of Compliance Monitoring is:

Laboratory Data Integrity Program
Office of Compliance Monitoring (EN-342)
Environmental Protection Agency
401 M St., S.W.
Washington, D.C. 20460

Appendix II-1

Guide to Use of This Bibliography

1. CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Standard. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2. UNITS OF ENTRY. The unit of entry in this bibliography is called a "study." In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3. IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by "Master Record Identifier," or MRID, number. This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for a further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine-character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number is also to be used whenever specific reference is needed.

4. FORM OF ENTRY. In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards of the American National Standards Institute (ANSI), expanded to provide for certain special needs.

a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b. Document Date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four-digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c. Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d. Trailing Parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:

   (1) Submission Date. The date of the earliest known submission appears immediately following the word "received."

   (2) Administrative Number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.

   (3) Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

   (4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456-A; the second, 123456-B; the 26th, 123456-Z; and the 27th, 123456-AA.

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting Registrations Under the Metribuzin Standard

MRID	CITATION
00015412	Analytical Biochemistry Laboratories (1976) Recovery of Sencor and Metabolites from Soybeans: Report No. 51072. (Unpublished study received Jan 19, 1977 under 100-583; prepared for Mobay Chemical Corp., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:095747-W)
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00078942	Mobay Chemical Corporation (1981) Addition to Synopsis of Sencor Residue Chemistry on Various Crops: Addition No. 6. (Compilation; unpublished study received Jul 13, 1981 under 3125-314; CDL:245572-A)
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00087795	Hayes, R.H.; Lamb, D.W.; Mallicoat, D.R.; et al. (1981) Metribuzin ((R) Sencor) Oncogenicity Study in Mice: 80050. (Unpublished study received Nov 23, 1981 under 3125-270; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:246397-A)
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00087925	Mobay Chemical Corporation (1978) (R) Sencor Residue Chemistry on Soybeans: Supplement No. 5. (Compilation; unpublished study received Dec 16, 1981 under 3125-277; CDL:246510-A)
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00106199	Mobay Chemical Corp. (1973) Sencor (Formerly BAY 94337): Metabolic, Analytical, Residue, and Flavor Evaluation for Potatoes. (Compilation; unpublished study received Mar 8, 1973 under 3125-EX-120; CDL:127000-A; 127001)
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GS0181-007 McMahon, B. (1974) Letter sent to W. Cox dated October 31, 1974, in EPA Administrative Record for PP #5F1559. 3p.

GS0181-008 Lamb, D.W.; and Roney, D.J. (1972) Acute Toxicity of Sencor to Fish. Report No. 33124. Prepared by Chemagro Division Research and Development. EPA Accession No. 255025.

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GS0181-010 Crawford, C.R.; and Anderson, R.H. (1972) The Skin and Eye Irritation Properties of Sencor Technical and 50% Wettable Powder on Rabbits. Report No. 32862. Prepared by Chemagro Division of Baychem Corporation, Kansas City, Missouri EPA Accession No. 112032.

OMB Approval No. 2000-0468 Appendix II-

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET

EPA REGISTRATION NO.

PRODUCT NAME

APPLICANT'S NAME

DATE GUIDANCE DOCUMENT ISSUED

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(ii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-1 (10 82)

OMB Approval No. 2000-0468 (Expires: 12-31-8

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:	**GUIDANCE DOCUMENT DATE** **ACTIVE INGREDIENT**

NAME OF FIRM	**EPA COMPANY NUMBER**

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to ente into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following re items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to b bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was ma to the following firm(s) on the following date(s):

NAME OF FIRM	**DATE OF OFFER**

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s), if any of the firms named in paragraph (3) ab have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly info me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This stateme does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	**SIGNATURE**	**DATE**

Appendix III-1

PRODUCT SPECIFIC DATA REPORT

EPA Registration No.________________ Guidance Document for________________________

Date________________________

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID#	Submitting Data (Attached)	
§158.20 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk-density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				

Appendix III-1 (continued)

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID#	Submitting Data (Attached)	
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explodability				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				
63-20	Corrosion characteristics				
63-21	Dielectric breakdown voltage				
§158.135 TOXICOLOGY					
81-1	Acute oral LD-50, rat				
81-2	Acute dermal LD-50				
81-3	Acute inhalation, LC-50 rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization				

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~~cant obtained the data from another firm (identify): applicant copied data from a publication: applicant obtained a copy of the data from EPA).~~

~~(d) The applicant shall submit with his application a statement that EPA, in its evaluation of the properties, efficacy, and safety of the formulated end-use product, may not consider any data as supporting the application, except the following data:~~

~~(1) The data the applicant has submitted to EPA under paragraph (b) of this section:~~

~~(2) Other data pertaining to the safety of the product's active ingredients, rather than to the safety of the end-use product: and~~

~~(3) Existing tolerances, food additive regulations, exemptions, and other clearances issued under the Fed Food, Drug, and Cosmetic Act.~~

~~(e) If the applicant knows that any item of data he submitted under this section was generated by (or at the expense of) another person who originally submitted the data to EPA (or its predecessor, USDA) on or after January 1, 1970, to support an application for registration, experimental use permit, or amendment adding a new use to an existing registration, or for reregistration (unless the applicant and the original data submitter have reached written agreement on the amount and the terms of payment of any compensation that may be payable under FIFRA section 3(c)(1)(D)(ii) with regard to approval of the application), the applicant shall submit to EPA a statement that he has furnished to each such identified original data submitter:~~

~~(1) A notification of the applicant's intent to apply for registration, including the proposed product name;~~

~~(2) An offer to pay the person compensation, with regard to the approval of the application, to the extent required by FIFRA sections 3(c)(1)(D) and 3(c)(2)(D);~~

~~(3) An identification of the item(s) of data to which the offer applies;~~

~~(4) An offer to commence negotiations to ascertain the amount and terms of compensation to be paid; and~~

~~(5) The applicant's name, address, and telephone number.~~

~~(f) If the applicant's product contains any active ingredient other than those that are present solely because of the incorporation into the product during formulation, of one or more other registered pesticide products purchased from another producer then the applicant shall also comply with § 162.9-5 as to such active ingredient, and the application shall contain an acknowledgment that for purposes of FIFRA section 3(c)(1)(D) the application relies on (and any resulting registration should be regarded as if it were based on) the Administrator's consideration of, the following data~~

~~(1) All data submitted or specifically cited by the applicant in support of the registration; and~~

~~(2) Each other item of data in the Agency's files which:~~

~~(i) Concerns the properties or effects of any such active ingredient, and~~

~~(ii) Is one of the types of data that EPA would require to be submitted for scientific review by EPA if the applicant sought the initial registration under FIFRA Section 3(c)(5) of a product with composition and intended uses identical to those proposed for the applicant's product, under the data requirements in effect on the date EPA approves the applicant's present application.~~

~~(Secs. 3, 6, and 25 of FIFRA, as amended, 7 U.S.C. 136 *et seq.*)~~

~~[44 FR 27953, May 11, 1979]~~

§ 162.10 Labeling requirements.

(a) *General*—(1) *Contents of the label.* Every pesticide products shall bear a label containing the information specified by the Act and the regulations in this Part. The contents of a label must show clearly and prominently the following:

(i) The name, brand, or trademark under which the product is sold as prescribed in paragraph (b) of this section;

(ii) The name and address of the producer, registrant, or person for whom produced as prescribed in paragraph (c) of this section;

(iii) The net contents as prescribed in paragraph (d) of this section;

(iv) The product registration number as prescribed in paragraph (e) of this section;

(v) The producing establishment number as prescribed in paragraph (f) of this section;

(vi) An ingredient statement as prescribed in paragraph (g) of this section;

(vii) Warning or precautionary statements as prescribed in paragraph (h) of this section;

(viii) The directions for use as prescribed in paragraph (i) of this section; and

(ix) The use classification(s) as prescribed in paragraph (j) of this section.

(2) *Prominence and legibility.* (i) All words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations in this part must be clearly legible to a person with normal vision, and must be placed with such conspicuousness (as compared with other words, statements, designs, or graphic matter on the labeling) and expressed in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(ii) All required label text must:

(A) Be set in 6-point or larger type;

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

(3) *Language to be used.* All required label or labeling text shall appear in the English language. However, the Agency may require or the applicant may propose additional text in other languages as is considered necessary to protect the public. When additional text in another language is necessary, all labeling requirements will be applied equally to both the English and other-language versions of the labeling.

(4) *Placement of Label*—(i) *General.* The label shall appear on or be securely attached to the immediate container of the pesticide product. For purposes of this Section, and the misbranding provisions of the Act, "securely attached" shall mean that a label can reasonably be expected to remain affixed during the foreseeable conditions and period of use. If the immediate container is enclosed within a wrapper or outside container through which the label cannot be clearly read, the label must also be securely attached to such outside wrapper or container, if it is a part of the package as customarily distributed or sold.

(ii) *Tank cars and other bulk containers*—(A) *Transportation.* While a pesticide product is in transit, the appropriate provisions of 49 CFR Parts 170-189, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

(B) *Storage.* When pesticide products are stored in bulk containers, whether mobile or stationary, which remain in the custody of the user, a copy of the label of labeling, including all appropriate directions for use, shall be securely attached to the container in the immediate vicinity of the discharge control valve.

(5) *False or misleading statements.* Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.15, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

(i) A false or misleading statement concerning the composition of the product;

(ii) A false or misleading statement concerning the effectiveness of the product as a pesticide or device;

(iii) A false or misleading statement about the value of the product for purposes other than as a pesticide or device;

(iv) A false or misleading comparison with other pesticides or devices;

(v) Any statement directly or indirectly implying that the pesticide or device is recommended or endorsed any agency of the Federal Government.

(vi) The name of a pesticide which contains two or more principal active ingredients if the name suggests one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling;

(vii) A true statement used in such a way as to give a false or misleading impression to the purchaser;

(viii) Label disclaimers which negate or detract from labeling statements required under the Act and these regulations;

(ix) Claims as to the safety of the pesticide or its ingredients, including statements such as "safe," "nonpoisonous," "noninjurious," "harmless" or "nontoxic to humans and pets" with or without such a qualifying phrase as "when used as directed"; and

(x) Non-numerical and/or comparative statements on the safety of the product, including but not limited to:

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known"

(C) "Pollution approved"

(6) *Final printed labeling.* (i) Except as provided in paragraph (a)(6)(ii) of this section, final printed labeling must be submitted and accepted prior to registration. However, final printed labeling need not be submitted until draft label texts have been provisionally accepted by the Agency.

(ii) Clearly legible reproductions or photo reductions will be accepted for unusual labels such as those silkscreened directly onto glass or metal containers or large bag or drum labels. Such reproductions must be of microfilm reproduction quality.

(b) *Name, brand, or trademark.* (1) The name, brand, or trademark under which the pesticide product is sold shall appear on the front panel of the label.

(2) No name, brand, or trademark may appear on the label which:

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an additional name pursuant to § 162.6(b)(4).

(c) Name and address of producer, registrant, or person for whom produced. An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must be qualified by appropriate wording such as "Packed for * * *," "Distributed by * * *," or "Sold by * * *" to show that the name is not that of the producer.

(d) *Net weight or measure of contents.* (1) The net weight or measure of content shall be exclusive of wrappers or other materials and shall be the average content unless explicitly stated as a minimum quantity.

(2) If the pesticide is a liquid, the net content statement shall be in terms of liquid measure at 68° F (20°C) and shall be expressed in conventional American units of fluid ounces, pints, quarts, and gallons.

(3) If the pesticide is solid or semisolid, viscous or pressurized, or is a mixture of liquid and solid, the net content statement shall be in terms of weight expressed as avoirdupois pounds and ounces.

(4) In all cases, net content shall be stated in terms of the largest suitable units, i.e., "1 pound 10 ounces" rather than "26 ounces."

(5) In addition to the required units specified, net content may be expressed in metric units.

(6) Variation above minimum content or around an average is permissible only to the extent that it represents deviation unavoidable in good manufacturing practice. Variation below a stated minimum is not permitted. In no case shall the average content of the packages in a shipment fall below the stated average content.

(e) *Product registration number.* The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label on which it appears and shall run parallel to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) *Producing establishments registration number.* The producing establishment registration number preceded by the phrase "EPA Est.", of the final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

(g) *Ingredient statement*—(1) *General.* The label of each pesticide product must bear a statement which contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients; and if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic calculated as elemental arsenic. The active ingredients must be designated by the term "active ingredients" and the inert ingredients by the term "inert ingredients," or the singular forms of these terms when appropriate. Both terms shall be in the same type size, be aligned to the same margin and be equally prominent. The statement "Inert Ingredients, none" is not required for pesticides which contain 100 percent active ingredients. Unless the ingredient statement is a complete analysis of the pesticide, the term "analysis" shall not be used as a heading for the ingredient statement.

(2) *Position of ingredient statement.* (i) The ingredient statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the ingredient statement cannot be clearly read, the ingredient statement must also appear on such outside container or wrapper. If the size or form of the package makes it impracticable to place the ingredient statement on the front panel of the label, permission may be granted for the ingredient statement to appear elsewhere.

(ii) The text of the ingredient statement must run parallel with other text on the panel on which it appears, and must be clearly distinguishable from and must not be placed in the body of other text.

(3) *Names to be used in ingredient statement.* The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of Section 25(c)(6).

(4) *Statements of percentages.* The percentages of ingredients shall be stated in terms of weight-to-weight. The sum of percentages of the active and the inert ingredients shall be 100. Percentages shall not be expressed by a range of values such as "22-25%." If the uses of the pesticide product are expressed as weight of active ingredient per unit area, a statement of the weight of active ingredient per unit volume of the pesticide formulation shall also appear in the ingredient statement.

(5) *Accuracy of stated percentages.* The percentages given shall be as precise as possible reflecting good manufacturing practice. If there may be unavoidable variation between manufacturing batches, the value stated for each active ingredient shall be the lowest percentage which may be present.

(6) *Deterioration.* Pesticides which change in chemical composition significantly must meet the following labeling requirements:

(i) In cases where it is determined that a pesticide formulation changes chemical composition significantly, the product must bear the following statement in a prominent position on the label: "Not for sale or use after [date]."

(ii) The product must meet all label claims up to the expiration time indicated on the label.

(7) *Inert ingredients.* The Administrator may require the name of any

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inert ingredient(s) to be listed in the ingredient statement if he determines that such ingredient(s) may pose a hazard to man or the environment.

(h) *Warnings and precautionary statements.* Required warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups; those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) *Required front panel statements.* With the exception of the child hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD_{50}	Up to and including 50 mg/kg	From 50 thru 500 mg/kg	From 500 thru 5000 mg/kg	Greater than 5000 mg/kg
Inhalation LC_{50}	Up to and including .2 mg/liter	From .2 thru 2 mg/liter	From 2 thru 20 mg/liter	Greater than 20 mg/liter
Dermal LD_{50}	Up to and including 200 mg/kg	From 200 thru 2000	From 2,000 thru 20,000	Greater than 20,000
Eye effects	Corrosive; corneal opacity not reversible within 7 days	Corneal opacity reversible within 7 days; irritation persisting for 7 days	No corneal opacity; irritation reversible within 7 days	No irritation
Skin effects	Corrosive	Severe irritation at 72 hours	Moderate irritation at 72 hours	Mild or slight irritation at 72 hours

(i) *Human hazard signal word*—(A) *Toxicity Category I.* All pesticide products meeting the criteria of Toxicity Category I shall bear on the front panel the signal word "Danger." In addition if the product was assigned to Toxicity Category I on the basis of its oral, inhalation or dermal toxicity (as distinct from skin and eye local effects) the word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word "poison."

(B) *Toxicity Category II.* All pesticide products meeting the criteria of Toxicity Category II shall bear on the front panel the signal word "Warning."

(C) *Toxicity Category III.* All pesticide products meeting the criteria of Toxicity Category III shall bear on the front panel the signal word "Caution."

(D) *Toxicity Category IV.* All pesticide products meeting the criteria of Toxicity Category IV shall bear on the front panel the signal word "Caution."

(E) *Use of signal words.* Use of any signal word(s) associated with a higher Toxicity Category is not permitted except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

(ii) *Child hazard warning.* Every pesticide product label shall bear on the front panel the statement "keep out of reach of children." Only in cases where the likelihood of contact with children during distribution, marketing, storage or use is demonstrated by the applicant to be extremely remote, or if the nature of the pesticide is such that it is approved for use on infants or small children, may the Administrator waive this requirement.

(iii) *Statement of practical treatment*—(A) *Toxicity Category I.* A statement of practical treatment (first aid or other) shall appear on the front panel of the label of all pesticides falling into Toxicity Category I on the basis of oral, inhalation or dermal toxicity. The Agency may, however, permit reasonable variations in the placement of the statement of practical treatment is some reference such as "See statement of practical treatment on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

(B) *Other toxicity categories.* The statement of practical treatment is not required on the front panel except as described in paragraph (h)(1)(iii)(A) of this section. The applicant may, however, include such a front panel statement at his option. Statements of practical treatment are, however, required elsewhere on the label in accord with paragraph (h)(2) of this section if they do not appear on the front panel.

(iv) ***Placement and prominence.*** All the require front panel warning statements shall be grouped together on the label, and shall appear with sufficient prominence relative to other front panel text and graphic material to make them unlikely to be overlooked under customary conditions of purchase and use. The following table shows the minimum type size requirements for the front panel warning statements on various sizes of labels:

Size of label front panel in square inches	Points	
	Required signal word, all capitals	Keep out of reach of Children
5 and under	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	12

(2) *Other required warnings and precautionary statements.* The warnings and precautionary statements as required below shall appear together on the label under the general heading "Precautionary Statements" and under appropriate subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard" and "Physical or Chemical Hazard."

(i) *Hazard to humans and domestic animals.* (A) Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accidental injury or damage. The precautionary paragraph shall be immediately preceded by the appropriate hazard signal word.

(B) The following table depicts typical precautionary statements. These statements must be modified or expanded to reflect specific hazards.

Toxicity category	Precautionary statements by toxicity category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I	Fatal (poisonous) if swallowed [inhaled or absorbed through skin]. Do not breathe vapor [dust or spray mist]. Do not get in eyes, on skin, or on clothing [Front panel statement of practical treatment required.]	Corrosive, causes eye and skin damage [or skin irritation]. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required.]
II	May be fatal if swallowed [inhaled or absorbed through the skin]. Do not breathe vapors [dust or spray mist]. Do not get in eyes, on skin, or on clothing. [Appropriate first aid statements required.]	Causes eye [and skin] irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required.]
III	Harmful if swallowed [inhaled or absorbed through the skin]. Avoid breathing vapors [dust or spray mist]. Avoid contact with skin [eyes or clothing]. [Appropriate first aid statement required.]	Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV	[No precautionary statements required.]	[No precautionary statements required.]

(ii) *Environmental hazards.* Where a hazard exists to non target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accidental injury or damage. Examples of the hazard statements and the circum

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placement of the statement of practical treatment is some reference such as "See statement of practical treatment on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

(B) *Other toxicity categories.* The statement of practical treatment is not required on the front panel except as described in paragraph (h)(1)(iii)(A) of this section. The applicant may, however, include such a front panel statement at his option. Statements of practical treatment are, however, required elsewhere on the label in accord with paragraph (h)(2) of this section if they do not appear on the front panel.

(iv) *Placement and prominence.* All the require front panel warning statements shall be grouped together on the label, and shall appear with sufficient prominence relative to other front panel text and graphic material to make them unlikely to be overlooked under customary conditions of purchase and use. The following table shows the minimum type size requirements for the front panel warning statements on various sizes of labels:

Size of label front panel in square inches	Points	
	Required signal word, all capitals	"Keep out of reach of Children"
5 and under	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	12

(2) *Other required warnings and precautionary statements.* The warnings and precautionary statements as required below shall appear together on the label under the general heading "Precautionary Statements" and under appropriate subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard" and "Physical or Chemical Hazard."

(i) *Hazard to humans and domestic animals.* (A) Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. The precautionary paragraph shall be immediately preceded by the appropriate hazard signal word.

(B) The following table depicts typical precautionary statements. These statements must be modified or expanded to reflect specific hazards.

Toxicity category	Precautionary statements by toxicity category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I	Fatal (poisonous) if swallowed [inhaled or absorbed through skin]. Do not breathe vapor [dust or spray mist]. Do not get in eyes, on skin, or on clothing [Front panel statement of practical treatment required.].	Corrosive, causes eye and skin damage [or skin irritation]. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required.]
II	May be fatal if swallowed [inhaled or absorbed through the skin]. Do not breathe vapors [dust or spray mist]. Do not get in eyes, on skin, or on clothing. [Appropriate first aid statements required.].	Causes eye [and skin] irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required.]
III	Harmful if swallowed [inhaled or absorbed through the skin]. Avoid breathing vapors [dust or spray mist]. Avoid contact with skin [eyes or clothing]. [Appropriate first aid statement required.].	Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV	[No precautionary statements required.]	[No precautionary statements required.]

(ii) *Environmental hazards.* Where a hazard exists to non target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury or damage. Examples of the hazard statements and the circumstances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD_{50} of 100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(B) If a pesticide intended for outdoor use contains an active ingredient with a fish acute LC_{50} of 1 ppm or less, the statement "This Pesticide is Toxic to Fish" is required.

(C) If a pesticide intended for outdoor use contains an active ingredient with an avian acute oral LD_{50} of 100 mg/kg or less, or a subacute dietary LC_{50} of 500 ppm or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(D) If either accident history or field studies demonstrate that use of the pesticide may result in fatality to birds, fish or mammals, the statement "This pesticide is extremely toxic to wildlife (fish)" is required.

(E) For uses involving foliar application to agricultural crops, forests, or shade trees, or for mosquito abatement treatments, pesticides toxic to pollinating insects must bear appropriate label cautions.

(F) For all outdoor uses other than aquatic applications the label must bear the caution "Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

(iii) *Physical or chemical hazards.* Warning statements on the flammability or explosive characteristics of the pesticide are required as follows:

Flash point	Required text
(A) PRESSURIZED CONTAINERS	
Flash point at or below 20° F; if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
Flash point above 20° F and not over 80° F or if the flame extension is more than 18 in long at a distance of 6 in from the flame.	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
(B) NONPRESSURIZED CONTAINERS	
At or below 20° F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 20° F and not over 80° F	Flammable. Keep away from heat and open flame.
Above 80° F and not over 150° F	Do not use or store near heat or open flame.

(i) *Directions for Use*—(1) *General requirements*—(i) *Adequacy and clarity of directions.* Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment.

(ii) *Placement of directions for use.* Directions may appear on any portion of the label provided that they are conspicuous enough to be easily read by the user of the pesticide product. Directions for use may appear on printed or graphic matter which accompanies the pesticide provided that:

(A) If required by the Agency, such printed or graphic matter is securely attached to each package of the pesticide, or placed within the outside wrapper or bag;

(B) The label bears a reference to the directions for use in accompanying leaflets or circulars, such as "See directions in the enclosed circular:" and

(C) The Administrator determines that it is not necessary for such directions to appear on the label.

(iii) *Exceptions to requirement for direction for use*—(A) Detailed directions for use may be omitted from labeling of pesticides which are intended for use only by manufacturers of products other than pesticide products in their regular manufacturing processes, provided that:

(*1*) The label clearly shows that the product is intended for use only in manufacturing processes and specifies the type(s) of products involved.

(*2*) Adequate information such as technical data sheets or bulletins, is available to the trade specifying the type of product involved and its proper use in manufacturing processes;

(*3*) The product will not come into the hands of the general public except after incorporation into finished products; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(B) Detailed directions for use may be omitted from the labeling of pesticide products for which sale is limited to physicians, veterinarians, or druggists, provided that:

(*1*) The label clearly states that the product is for use only by physicians or veterinarians;

(*2*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment; and

(*3*) The product is also a drug and regulated under the provisions of the Federal Food, Drug and Cosmetic Act.

(C) Detailed directions for use may be omitted from the labeling of pesticide products which are intended for use only by formulators in preparing pesticides for sale to the public, provided that:

(*1*) There is information readily available to the formulators on the composition, toxicity, methods of use, applicable restrictions or limitations, and effectiveness of the product for pesticide purposes;

(*2*) The label clearly states that the product is intended for use only in manufacturing, formulating, mixing, or repacking for use as a pesticide and specifies the type(s) of pesticide products involved;

(*3*) The product as finally manufactured, formulated, mixed, or repackaged is registered; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(2) *Contents of Directions for Use.* The directions for use shall include the following, under the headings "Directions for Use":

(i) The statement of use classification as prescribed in 162.10(j) immediately under the heading "Directions for Use."

(ii) Immediately below the statement of use classification, the statement "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

(iii) The site(s) of application, as for example the crops, animals, areas, or objects to be treated.

(iv) The target pest(s) associated with each site.

(v) The dosage rate associated with each site and pest.

(vi) The method of application, including instructions for dilution, if required, and type(s) of application apparatus or equipment required.

(vii) The frequency and timing of applications necessary to obtain effective results without causing unreasonable adverse effects on the environment.

(viii) Specific limitations on reentry to areas where the pesticide has been applied, meeting the requirements concerning reentry provided by 40 CFR Part 170.

(ix) Specific directions concerning the storage and disposal of the pesticide and its container, meeting the requirements of 40 CFR Part 165. These instructions shall be grouped and appear under the heading "Storage and Disposal." This heading must be set in type of the same minimum sizes as required for the child hazard warning (See Table in § 162.10(h)(1)(iv).)

(x) Any limitations or restrictions on use required to prevent unreasonable adverse effects, such as:

(A) Required intervals between application and harvest of food or feed crops.

(B) Rotational crop restrictions.

(C) Warnings as required against use on certain crops, animals, objects, or in or adjacent to certain areas.

(D) [Reserved]

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by. . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

APPENDIX IV-2 (continued)

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & crossbones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of practical treatment	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked.
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9C	Misuse statement	All products	Immediately following heading of directions for use		
10A	Reentry statement	All cholinesterase inhibitors	In the directions for use	Immediately after misuse statement	
10C	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use.
10D	Directions for use	All products	None	None	May be in metric as well as U.S. units

PHYSICAL-CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. ALL OTHER PRESSURIZED CONTAINERS	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and not over 80°F.	Flammable. Keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.

STORAGE AND DISPOSAL INSTRUCTIONS FOR PESTICIDES

All products are required to bear specific label instructions about storage and disposal. Storage and disposal instructions must be grouped together in the directions for use portion of the label under the heading STORAGE AND DISPOSAL. Products intended solely for domestic use need not include the heading "STORAGE AND DISPOSAL." The STORAGE AND DISPOSAL heading must appear in the minimum type size listed below:

Size of label front panel in square inches	Required type size for the heading STORAGE AND DISPOSAL (all capitals)
10 and under	6 point
Above 10 to 15	8 point
Above 15 to 30	10 point
Over 30	12 point

Storage and disposal instructions must be set apart and clearly distinguishable from other directions for use. Blocking storage and disposal statements with a solid line is suggested as a means of increasing their prominence.

A. Storage Instructions:

All product labels are required to have appropriate storage instructions. Specific storage instructions are not prescribed. Each registrant must develop his own storage instructions, considering, when applicable, the following factors:

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.

2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.

3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

"Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

Labels for all other products, except those intended for domestic use, must bear the following pesticide disposal statement:

"Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

3. Products intended for domestic use only must bear the following disposal statement: "Securely wrap original container in several layers of newspaper and discard in trash."

C. Container Disposal Instructions

The label of each product must bear container disposal instructions appropriate to the type of container.

1. All products intended for domestic use must bear one of the following container disposal statements:

Container Type	Statement
Non-aerosol products (bottles, cans, jars)	Do not reuse container (bottle, can, jar). Rinse thoroughly before discarding in trash.
Non-aerosol products (bags)	Do not reuse bag. Discard bag in trash.
Aerosol products	Replace cap and discard containers in trash. Do not incinerate or puncture.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.

5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.

6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

B. Pesticide Disposal Instructions:

The label of all products, except those intended solely for domestic use, must bear explicit instructions about pesticide disposal. The statements listed below contain the exact wording that must appear on the label of these products:

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."

2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients appearing on the "Acutely Hazardous" Commercial Pesticide Products List (RCRA "E" List) at the end of this appendix or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, skin or eye irritation potential, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

   "Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

   The labels of all products, except those intended for domestic use, containing active or inert ingredients that appear on the "Toxic" Commercial Pesticide Products List (RCRA "F" List) at the end of this appendix or presently meet any of the criteria in Subpart C, 40 CFR 261 for a hazardous waste must bear the following pesticide disposal statement:

Appendix IV-4
(continued)

2. The labels for all other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused[1], dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording)

1/ Manufacturer may replace this phrase with one indicating whether and how fiber drum may be reused.

Pesticides that are hazardous wastes under 40 CFR 261.33(e) and (f) when discarded.

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List) Active Ingredients, (no inerts):

Acrolein
Aldicarb
Aldrin
Allyl alcohol
Aluminum phosphide
4-Aminopyridine
Arsenic acid
Arsenic pentoxide
Arsenic trioxide
Calcium cyanide
Carbon disulfide
p-Chloroaniline
Cyanides (soluble cyanide salts, not specified elsewere)
Cyanogen chloride
2-Cyclohexyl-4,6-dinitrophenol
Dieldrin
O,O-Diethyl S-[2-ethylthio)ethyl] phosphorodithioate
    (disulfoton, Di-Syston)
O,O-Diethyl O-pyrazinyl phosphorothioate (Zinophos)
Dimethoate
O,O-Dimethyl O-p-nitrophenyl phosphorothioate (methyl parathion)
4,6-Dinitro-o-cresol and salts
4,6-Dinitro-o-cyclohexylphenol
2,4 Dinitrophenol
Dinoseb
Endosulfan
Endothall
Endrin
Famphur
Fluoroacetamide
Heptachlor
Hexanethyl tetraphosphate
Hydrocyanic acid
Hydrogen cyanide
Methomyl
alpha-Naphthylthiourea (ANTU)
Nicotine and salts
Octamethylpyrophosphoramide (OMPA, schradan)
Parathion

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List)
Active Ingredients continued:

Phenylmercuric acetate (PMA)
Phorate
Potassium cyanide
Propargyl alcohol
Sodium azide
Sodium cyanide
Sodium fluoroacetate
Strychnine and salts
O,O,O,O-Tetraethyl dithiopyrophosphate (sulfotepp)
Tetraethyl pyrophosphate
Thallium sulfate
Thiofanox
Toxaphene
Warfarin
Zinc phosphide

Appendix IV-4
(continued)

"Toxic" Commercial Pesticide Products (RCRA "F" List) Active Ingredients:

Acetone
Acrylonitrile
Amitrole
Benzene
Bis(2-ethylhexyl)pthalate
Cacodylic acid
Carbon tetrachloride
Chloral (hydrate)
Chlordane (technical)
Chlorobenzene
4-Chloro-m-cresol
Chloroform
o-Chlorophenol
4-Chloro-o-toluidine hydrochloride
Creosote
Cresylic acid
Cyclohexane
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
    (kepone, chlordecone)
1,2-Dibromo-3-chloropropane (DBCP)
Dibutyl phthalate
S-3,3-(Dichloroallyl diisopropylthiocarbamate (diallate, Avadex)
o-Dichlorobenzene
p-Dichlorobenzene
Dichlorodifluoromethane (Freon 12®)
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide (pronamide,Kerb)
Dichloro diphenyl dichloroethane (DDD)
Dichloro diphenyl trichloroethane (DDT)
Dichlorethyl ether
2,4-Dichlorophenoxyacetic, esters and salts (2,4-D)
1,2-Dichloropropane
1,3-Dichloropropane (Telone)
Dimethyl phthalate
Ethyl acetate
Ethyl 4,4'-dichlorobenzilate (chlorobenzilate)
Ethylene dibromide (EDB)
Ethylene dichloride
Ethylene oxide
Formaldehyde
Furfural
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloroethane
Hydrofluoric acid

Appendix IV-4
(continued)

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Active Ingredients:

Isobutyl alcohol
Lead acetate
Lindane
Maleic hydrazide
Mercury
Methyl alcohol
Methyl bromide
Methyl chloride
2,2'-Methylenebis (3,4,6-trichlorophenol) (hexachlorophene)
Methylene chloride
Methyl ethyl ketone
4-Methyl-2-pentanone (methyl isobutyl ketone)
Naphthalene
Nitrobenzene
p-Nitrophenol
Pentachloroethane
Pentachloronitrobenzene (PCNB)
Pentaclorophenol
Phenol
Phosphorodithioic acid, 0,0-diethyl, methyl ester
Propylene dichloride
Pyridine
Resorcinol
Safrole
Selenium disulfide
Silvex
1,2,4,5-Tetrachlorobenzene
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
2,3,4,6-Tetrachlorophenol
Thiram
Toluene
1,1,1-Trichloroethane
Trichloroethylene
Trichloromonofluoromethane (Freon 11®)
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
Xylene

Appendix IV-4
(continued)

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Inert Ingredients:

Acetone
Acetonitrile
Acetophenone
Acrylic acid
Aniline
Benzene
Chlorobenzene
Chloroform
Cyclohexane
Cyclohexanone
Dichlorodifluoromethane (Freon 12®)
Diethyl phthalate
Dimethylamine
Dimethyl phthalate
1,4-Dioxane
Ethylene oxide
Formaldehyde
Formic acid
Isobutyl alcohol
Meleic anhydride
Methyl alcohol (methanol)
Methyl ethyl ketone
Methyl methacrylate
Naphthalene
Saccharin and salts
Thiourea
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichlorofluoromethane (Freon 11®
Vinyl chloride
Xylene